SOUTHERN RHODESIA

Rhodesia, Southern. Treasury.

Second Four-year Plan

CAPITAL EXPENDITURE FROM LOAN FUNDS

April, 1951 to March, 1955

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

324.68

Southern Rhodesia

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SOUTHERN RHODESIA GOVERNMENT
SECOND FOUR YEAR PLAN OF CAPITAL DEVELOPMENT

1951 - 1955

Part I: Government Departments, Statutory Bodies (excluding Railways) and Local Authorities.

1. The original plan, covering the period 1st April 1949 to the 31st March, 1953, which was presented by the Minister of Finance in 1949, envisaged an expenditure of £48,000,000 over the period.

	First Plan.
Government Departments	£ 21,530,362
Statutory Bodies	13,406,055
Local Authorities	4,000,000
Salisbury and Bulawayo City Councils	8,000,000
Sabi Valley	-
Contingencies	1,063,583
	£ 48,000,000

The sources of finance were planned as follows:-

	First Plan.
London Loan raised November, 1948	£ 5,000,000
To be raised in London	16,000,000
To be raised by issue of Local Stock	16,000,000
Transfers from budget surpluses	3,000,000
Loan recoveries	3,700,000
Temporary Borrowings	3,000,000
Tobacco Savings Contribution (1949).	1,300,000
	£ 48,000,000

/2. The following .....

2. The following table is an analysis of the 1st and 2nd Plans.

Government Departments.

Department	1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	Total.
	£	£	£	£	£	£	£
Native Affairs:							
1st Plan.	404,000	400,000	400,000	400,000	-	-	1,604,000
2nd Plan.	-	-	290,000	320,000	320,000	320,000	1,250,000
Printing & Stationery.							
1st Plan.	38,600	16,500	12,600	16,400	-	-	84,100
2nd Plan.	-	-	9,000	13,000	-	8,000	30,000
Posts & Telegraphs:							
1st Plan.	1,000,000	700,000	650,000	650,000	-	-	3,000,000
2nd Plan.	-	-	570,000	1,000,000	940,000	940,000	3,450,000
Internal Affairs, Health & Education:							
1st Plan.	67,150	36,850	37,000	37,000	-	-	178,000
2nd Plan.	-	-	43,800	38,500	28,000	14,700	125,000
Mines:							
1st Plan.	100,000	90,000	60,000	50,000	-	-	300,000
2nd Plan.	-	-	125,000	115,000	5,000	5,000	250,000
Public Works:							
1st Plan.	900,000	900,000	1,000,000	1,200,000	-	-	4,000,000
2nd Plan.	-	-	1,800,000	1,650,000	1,900,000	2,050,000	7,400,000
R.A.F. Housing:							
1st Plan.	-	500,000	500,000	-	-	-	1,000,000
2nd Plan.	-	-	248,500	251,500	-	-	500,000
Roads:							
1st Plan.	902,922	963,780	963,780	963,780	-	-	3,794,262
2nd Plan.	-	-	1,239,000	1,345,000	1,307,000	1,309,000	5,200,000
Agriculture:							
1st Plan.	626,000	602,000	430,000	342,000	-	-	2,000,000
2nd Plan.	-	-	660,000	190,000	190,000	160,000	1,200,000

Department	1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	Total
	£	£	£	£	£	£	£
Irrigation:							
1st Plan.	400,000	696,667	1,104,667	798,666	-	-	3,000,000
2nd Plan.	-	-	650,000	700,000	750,000	1,000,000	3,100,000
Civil Aviation:							
1st Plan.	12,725	99,442	193,467	94,366	-	-	400,000
2nd Plan.	-	-	300,000	308,000	94,000	38,000	740,000
Trade & Industrial Development:							
1st Plan.	120,000	-	-	-	-	-	120,000
2nd Plan.	-	-	200,000	-	-	-	200,000
Central Mechanical Equipment:							
1st Plan.	1,100,000	300,000	300,000	300,000	-	-	2,000,000
2nd Plan.	-	-	613,000	314,000	314,000	314,000	1,555,000
Defence:							
1st Plan.	50,000	-	-	-	-	-	50,000
2nd Plan.	-	-	-	-	-	-	-
TOTALS:							
1st Plan.	£5,721,397	£5,305,239	£5,651,514	£4,852,212	£ -	£ -	£21,530,362
2nd Plan.	£ -	£ -	£6,748,300	£6,245,000	£5,848,000	£6,158,700	£25,000,000

STATUTORY BODIES

		1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	Total
		£	£	£	£	£	£	£
Land Bank	1st Plan	514,001	200,001	200,001	200,001	-	-	1,114,004
	2nd Plan	-	-	949,000	555,500	555,500	555,500	2,615,500
National Building & Housing Board	1st Plan	1,750,000	1,750,000	-	-	-	-	3,500,000
	2nd Plan	-	-	1,000,000	1,000,000	1,000,000	1,000,000	4,000,000
Rhodesian Iron & Steel Commission	1st Plan	500,000	750,000	750,000	500,000	-	-	2,500,000
	2nd Plan	-	-	765,000	-	-	-	765,000
Cotton Research & Industry Board	1st Plan	334,000	181,000	100,000	-	-	-	615,000
	2nd Plan	-	-	190,000	205,000	474,500	594,500	1,464,000
Electricity Supply Commission	1st Plan	1,200,000	1,000,000	1,200,000	1,600,000	-	-	5,000,000
	2nd Plan	-	-	2,745,000	2,598,000	2,203,000	2,134,000	9,680,000
Cold Storage Commission	1st Plan	204,551	175,000	50,000	29,000	-	-	458,551
	2nd Plan	-	-	290,000	43,500	60,500	-	394,000
Grain Marketing Board	1st Plan	50,000	50,000	50,000	50,000	-	-	200,000
	2nd Plan	-	-	180,000	157,500	277,500	227,500	842,500
Sugar Industry Board	1st Plan	12,000	6,500	-	-	-	-	18,500
	2nd Plan	-	-	27,000	27,000	-	-	54,000
Central Africa Airways	1st Plan	-	-	-	-	-	-	-
	2nd Plan	-	-	-	185,000	-	-	185,000
TOTALS	1st Plan	£4,564,552	£4,112,501	£2,350,001	£2,379,001	£ -	£ -	£13,406,055
	2nd Plan	£ -	£ -	£6,146,000	£4,771,500	£4,571,000	£4,5[illegible]1,500	£20,000,000

LOCAL AUTHORITIES

		1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	Total
		£	£	£	£	£	£	£
Salisbury	1st Plan	1,000,000	1,000,000	1,000,000	1,000,000	-	-	4,000,000
	2nd Plan	-	-	1,750,000	1,750,000	1,750,000	1,750,000	7,000,000
Bulawayo	1st Plan	1,000,000	1,000,000	1,000,000	1,000,000	-	-	4,000,000
	2nd Plan	-	-	1,500,000	1,500,000	1,500,000	1,500,000	6,000,000
Others	1st Plan	1,000,000	1,000,000	1,000,000	1,000,000	-	-	4,000,000
	2nd Plan	-	-	1,750,000	1,750,000	1,750,000	1,750,000	7,000,000
TOTALS	1st Plan	£3,000,000	£3,000,000	£3,000,000	£3,000,000	-	-	£12,000,000
	2nd Plan	£ -	£ -	£5,000,000	£5,000,000	£5,000,000	£5,000,000	£20,000,000

SUMMARY OF SECOND PLAN.

3. Estimates of -

Expenditure by Government Departments	£25,000,000
Expenditure by Statutory Bodies	20,000,000
Expenditure by Local Authorities	20,000,000
	£65,000,000

Note: This estimate is exclusive of any expenditure on the Kariba Gorge Hydro-Electric project.

Financing of the Second Plan.

It is proposed to finance the second plan as follows:-

Carry forward from 1st plan		£ 1,370,000
London Loans - last two instalments for first four year plan including portion received before 1st April, 1951		£10,000,000
Local Loans	£16.00 m.	
Loan Recoveries (Ordinary)	4.00 m.	
(Steel Works)	4.67 m.	
Budget Surpluses	4.00 m.	
Temporary Borrowings	3.50 m.	£32,170,000
Additional funds to be borrowed externally		£21,460,000
		£65,000,000

4. ### Progress of the First Plan.

The following table shows the actual expenditure incurred from loan funds during the period 1st April 1949 to 31st March 1951 as compared with the estimated provision for the same period under the 1st plan and the sums actually voted.

Amount Voted		Estimate as per Plan	Actual Expenditure
£		£	£
12,920,974	Government Departments	11,026,636	10,641,286
12,338,428	Statutory Bodies	8,677,053	10,343,717
5,567,750	Local Authorities	6,000,000	5,122,363
£30,827,152	TOTALS	£25,703,689	£26,107,366

Of the expenditure of £10,641,286 for Government Departments £225,500 is for financing Government trading accounts and £973,695 is in respect of recoverable loans.

Expenditure of £120,000 for Defence stock-piling has been omitted and also the expenditure in connection with the refund of over-credits to Loan Account. The refunds over the period total £7,700.

5. The position on Loan Account for the period 1st April 1949, to the 31st March, 1951, is as follows:-

To -	Loan Expenditure (including £120,000 for Defence stock-piling and £7,700 refund of over-credits).	26,235,066	By -	Surplus brought forward	4,464,117
	Cost of raising loans	312,061		London Borrowings:	8,261,690
	Redemption of Debt			3% I.S. 1971-73 1,690	
	S.R. Loan Certificates	233,343		3½% L.R.S. 1967-1969 6,000,000	
	S.R. 3% War Bonds	417,745		3½% R.S. 1980-1985 2,260,000	
	Tobacco Savings Certificates	29,992		- Local Borrowings	4,824,602
	Surplus as at 31.3.51	3,625,995		3½% L.R.S. 1968-78 72,985	
				3½% L.R.S. 1968-73 1,650,000	
				3% Bonds 1954 1,617	
				3¾% L.R.S. 1969-71 3,100,000	
				- Other Local Borrowings	5,873,658
				Tax Reserve Certificates (net) 360,000	
				Tobacco Savings Certificates 1,200,000	
				Temporary Loans (net) 2,723,483	
				Overdraft 1,590,175	
				1949/50 697,092	
				1950/51 593,083	
				Refunds to Loan Account	1,439,478
				Transfers from Budget Surpluses	2,800,000
				Non-recurrent credits	3,190,657
				Public Debt Redemption Fund 762,955	
				National Re-construction Fund 614,231	
				Liquidation of Pension Funds 1,077,379	
				Liquidation of Farmers Debt Reserve Fund 26,092	
				Profit: Trade & Industrial Development Trading A/c 710,000	
		£30,854,202			£30,854,202

Items of Expenditure transferred from Loan Account to Revenue Account.

6. A feature of Southern Rhodesian budgets in recent years has been the transfer to Revenue Account of items of expenditure which had in past years been charged to Loan Account.

The following items have been transferred since the 1st April, 1949:-

(a) Stores Accounts: Government Stores Accounts have operated on capital voted from Loan Funds. The present system is for Stores Accounts to be operated through Revenue Votes - the gross amount for purchases being voted and receipts being brought to account as appropriations-in-aid. The Native Department Stores Imprest Account, the Roads Department Imprest Account and the Ordnance and Supply Stores have been brought onto this basis. The only outstanding Stores Account not yet run through Revenue Votes is the Irrigation Department Working Account. A "Divisional Stores" has been created within the Department of Agriculture and Lands which will gradually take over the functions of this Working Account. In addition, a mobilisation reserve of military stores is being built up through the agency of the Ordnance and Supply Stores. This is not a new project. It was in force prior to 1939 but at that time purchases were charged to Loan Account. The expenditure charged to Revenue Account in these respects since 1949 are :-

Ordnance and Supply Stores:

1950-51	£130,000
1951-52	£ 38,000

Mobilisation Reserve of Military Stores

1949-50	£ 50,000
1950-51	£ 50,000
1951-52	£230,000

(b) Cost of Raising Loans: In terms of the General Loans Act, the costs of raising loans are chargeable to Loan Account. The practice now is for a sum to be voted on Revenue Account as a contribution to Loan Account to offset this charge. Amounts voted to date are

1949-50	£ 78,750
1950-51	£ 90,000
1951-52	£ 92,000

(c) Lands: Unitl recently all expenditure in connection with land acquisition was charged to Loan Account. It is now the practice to charge the expenditure for land which is not expected to be revenue producing, land for the protection of natural resources and minor land acquisitions to Revenue Account.

In 1950-51 land costing £42,000 was acquired from Revenue Votes for extensions to the Wankie Game Reserve. Provision for the following land acquisitions is now made on Revenue Votes:-

Purchase of relinquished land holdings in Native Areas : 1951-52 (token sum)	£ 50
Minor Airfields: 1951-52	£2,000
Land for Protection of Sources of Streams: 1951-52 (token sum)	£ 1

(d) Water and Soil Conservation: Water and soil conservation works on land for native use is now charged to Revenue. Provisions made in this connection on Revenue Votes have been:

1949-50	£295,500
1950-51	£370,000
1951-52	£540,000

(e) Buildings: In view of the tremendous demand for buildings of all types in the Colony, it has been necessary for the Government to erect prefabricated and austerity type structures. The expenditure in this connection is charged to Revenue Votes. Road Camp accommodation has also been transferred to Revenue Account. The provision made on Revenue Votes for building purposes in 1951-52 exceeds that for 1950-51 by approximately £220,000.

(f) Roads: Provision for road construction which is not of a high order is now charged to Revenue Account. In 1951-52 provision in this connection is as follows:

Roads and Bridges in native areas	£50,000
Land Settlements and Development roads	12,600

(g) Irrigation Works: Expenditure in connection with the sinking of boreholes on crown land and minor Government water supplies is now charged to Revenue Account. Provision for 1951-52 has been made as follows:-

Boreholes on Crown Land	£ 2,000
Minor Government Water Supplies	£40,000

(h) Defence: All expenditure in connection with military preparedness is charged to Revenue Account. As well as items of military equipment and aircraft, the cost of a major airfield which will serve both civil and military needs has been split between Revenue Account and Loan Account. The basis is that that expenditure incurred purely for military purposes shall be charged to Revenue. In 1951-52, £350,000 has been provided on revenue funds and £300,000 on loan funds in this connection.

(i) Other: Other items of expenditure transferred in 1951-52 are:

Loans	£ 3,300
Fencing	10,000
Dipping tanks on unalienated crown land	500
Aeradio and navigational aid equipment (£500 in 1950-51)	10,000
Plant, equipment and tools (£20,000 in 1950-51)	43,850

(j) In addition to the above, the wages of personnel of the Posts and Telegraphs Department who are engaged on works of a capital nature as well as maintenance work, are charged directly to Revenue. No adjustment is made against Loan Funds. At one time, a contribution, on an arbitary basis, was made from Loan Account to Revenue Account in this connection. The last payment of this nature was made in 1946-47.

Furniture, with an estimated life of more than ten years, was once provided from Loan funds. This practice ceased in 1948/49. All furniture is now met from revenue. Camp equipment for field personnel was charged where possible against works. These works were often capital ones. Although the sums are not substantial, the expenditure with effect from 1951/52 is chargeable only against revenue.

(k) There are some items of new expenditure which have been charged directly to revenue account although of a capital nature. For example, consultant's fees for special projects such as liquid fuels from coal and the Sabi Valley Scheme are not charged against the projects themselves but are met directly from revenue. These amounts are in some cases substantial. The fees for the liquid fuels from coal project are likely to be in the region of £250,000.

While the actual amounts so far transferred from Loan Account to Revenue account in any one year may not appear to be of great magnitude in relation to the total expenditure of Government, the cumulative effect on Loan Account is very substantial. The policy is the recognition of the growth of the Government's resources, and heralds the change from the old order more closely associated with commercial accounting.

7. From the tables analysing the first and second plans, it will be noted that estimated expenditure compares as follows:-

Government departments

1st Plan 1/4/49 to 31/3/53	£21,530,362
2nd Plan 1/4/51 to 31/3/55	£25,000,000
Increase	£ 3,469,638

Statutory Bodies

1st Plan 1/4/49 to 31/3/53	£13,406,055
2nd Plan 1/4/51 to 31/3/55	£20,000,000
Increase	£ 6,593,945

Local Authorities

1st Plan 1/4/49 to 31/3/53	£12,000,000
2nd Plan 1/4/51 to 31/3/55	£20,000,000
Increase	£ 8,000,000

Totals:

1st Plan 1/4/49 to 31/3/53	£46,936,417
2nd Plan 1/4/51 to 31/3/55	£65,000,000
Increase	£18,063,583

8. Since the conception of the first plan devaluation has taken place and the international situation has resulted in the expenditure of considerable sums in the supply countries on military preparedness. These two major factors have brought about a considerable increase in the internal and external cost of capital investment in the country. The increased cost has occurred during an era of phenomenal development the causes of which are given in detail in the paper "Economic Survey of Southern Rhodesia 1946-1951".

The influx of new settlers has created an enormous demand for houses, hospitals, schools and other social services. It has added greater emphasis on the need to produce adequate supplies of food. The establishment of new industries has created a considerable demand for electric power, rail, road and telecommunication.

Second Four Year Plan.

Government Departments

9. Native Affairs:

The expenditure for the period 1/4/49 to 31/3/51 was £653,705 as compared with the estimate for the 1st Plan for the same period of £804,000. Included in the figure of £653,705 is £84,888 in respect of items of expenditure now charged to Revenue Account (roads and bridges and construction equipment). Of the balance £454,629 was for buildings comprising administrative offices, schools, clinics, and living accommodation. £98,308 was expended on the acquisition of land for native settlement and £15,182 on recoverable loans (mainly to native missions for permanent improvements).

The The second plan is along the same lines but two new major developments have been added. In order to relieve the acute shortage of accommodation for Africans in the Salisbury and Bulawayo municipal locations, Government in 1949/50 undertook to erect additional buildings within the native village settlements of Highfield and Luveve to house Africans employed by Government. £43,854 was spent on this during 1950/51. The houses in these village settlements are of a better type than those in locations, being 625 square feet in area and are designed to meet the needs of Africans in the higher income groups who require better living conditions.

Besides Luveve and Highfield, there are two other village settlements, one in Gwelo and one at Victoria Falls.

The other development is the building of distinct African townships in order to accommodate urbanised natives who cannot be allocated land in native areas and those natives, who by virtue of being resident in towns have become detribalised. The intention is that these townships will be truly African ones, managed in due course by an African Council and in which African industrial and commercial organisations will evolve. The scheme is still in the pilot stage.

The expenditure of £1,250,000 contemplated in the second plan is mainly for buildings in native areas. This compares with £454,629 actually expended in this connection from 1/4/49 to 31/3/51. The programme of work is the construction of 450 cottages per annum and the construction and extension of schools, clinics and administrative buildings within the funds and building potential available.

During 1949-51 410 cottages, 9 clinics, 34 European houses and 12 administrative buildings were constructed. In addition, schools were enlarged to the extent of 58,750 square feet.

The cost of soil conservation has since 1949/50 been met from Revenue. The amounts provided for this purpose have been - 1949/50: £70,500; 1950/51: £120,000; and 1951/52: £140,000.

10. Printing and Stationery: The expenditure for the period 1/4/49 to 31/3/51 was £59,167 as compared with the estimate for the same period under the 1st Plan of £55,100. This was expended entirely on the acquisition of plant and machinery for the State Printing Works. In the past the greater portion of Government printing was let out on contract. The works are in operation although not yet completed and a substantial saving on printing costs is already evident. The £30,000 required under the second plan is for completion of the Works. The final cost is now estimated in the region of £85,000 which compares favourably with the amount of £84,100 estimated under the first plan.

11. Posts and Telegraphs: The expenditure for the period 1/4/49 to 31/3/51 was £1,664,803 as compared with the estimate for the same period under the first plan of £1,700,000. The original plan envisaged an expenditure over 4 years of £3,000,000. The second plan is for an estimated expenditure of £3,450,000 over 4 years.

The growth of the Colony is directly related to the demand for communication facilities and the Department has not enught up with it and it continues to increase.

The following table shows the work actually completed between 1949 and 1951 and the work expected to be completed in each year of the second plan:

	1949 to 1951	1951/ 1952	1952/ 1953	1953/ 1954	1954/ 1955	Total 2nd Plan
Telephone Subscribers Installations	7,802	1,087	6,582	11,910	14,559	34,138
Miles of Circuits Erected						
Trunk Lines	951	400	400	400	400	1,600
Rural Party Lines	3,160	1,200	1,400	1,550	1,650	5,800
Subscribers Exchange Lines	413	200	200	200	200	800
Underground Cables	9,553	1,444	17,000	17,000	17,000	52,444
Automatic Exchanges						
Additional line capacity	9,180	2,540	2,760	6,420	5,050	16,770
Manual Exchanges						
Number of switchboards	-	70	100	155	165	490
Carrier Systems						
Channel terminals	290	256	144	192	152	744
Miles of circuit	14,560	12,800	7,200	8,600	7,600	36,200
V.H.F. Radio Telephone Links	1	3	2	6	2	13
Radio	£95,259	£41,750	£26,700	£55,500	£24,400	£148,350

Radio is for broadcasting equipment, police radio equipment, and equipment at telegraph agencies.

12. Internal Affairs, Health and Education:

The expenditure for the period 1/4/49 to 31/3/51 was £55,541 as compared with the estimate for the same period under the first plan of £104,000. The saving was due to the provision of £60,000 for Silicosis Fund capital not being required. Of the expenditure of £55,541, £21,530 was for the acquisition of urban sites for Government purposes, £8,284 was in connection with railway sidings in Town Management Board areas to serve industrial sites, and £24,250 was for recoverable loans.

The expenditure of £125,000 estimated for the period of the 2nd Plan is made up as follows:

Acquisition of urban sites for Government purposes	£77,400
Railways sidings for industrial sites in Town Management Board areas	5,400
Recoverable Loans	42,200
	£125,000

Regarding the acquisition of urban sites, by law the Government is entitled to 10% of Municipal commonage lands for public purposes. The acquisitions provided for are not in municipal areas but in areas where the Government does not hold a right of resumption.

13. Mines:

The expenditure for the period 1/4/49 to 31/3/51 was £243,320 as compared with the estimate for the same period under the first plan of £190,000. Of the expenditure £87,000 was for recoverable loans.

Since the original plan was conceived, it was decided to purchase the Wankie coal concession for £350,000 payable as to £150,000 in 1950/51, £100,000 in 1951/52, and £100,000 in 1952/53. This acquisition was outside the first plan. The payment of the first instalment is reflected in the expenditure figure of £243,320.

The original estimate of £300,000 under the first plan was for assistance to the mining industry by way of loans. The major assistance was for ex-servicemen in terms of the Ex-Servicemen's Mining Settlement Scheme. The estimate for the second plan of £250,000 is made up as follows:

Second and third instalment of the purchase price for the Wankie Coal concession	£200,000
Assistance to the mining industry by way of loans	50,000
	£250,000

The Ex-Servicemen's Mining Settlement Scheme has restracted considerably. Successful mines require little if any further assistance and the unsuccessful ones have been closed. There are still some border-line cases requiring assistance.

14. Public Works:

The expenditure for the period 1/4/49 to 31/3/51 was £2,611,668 as compared with the estimate for the same period under the first plan of £1,800,000.

Following on the general development of the Colony and the maintenance of a comparatively high rate of immigration, the demand for public buildings has been great. This applies particularly to essential services such as education, health, postal and police. In addition, since 1/4/49 and following on the devaluation of sterling there has been a marked increase in the cost of building.

The estimate for the period of the second plan is £7,400,000. The Departments of Education, Health and Posts and Telegraphs in particular will require additional buildings and major extensions to existing ones in order to provide services for the increased population.

The Department of Public Works employs about 17% of the Colony's building potential. The actual work is mostly let out on contract to the building industry but for special schemes of a mass production nature such as the R.A.F. Housing Scheme and the Mabelreign Scheme the work is done by the National Building and Housing Board on repayment.

15. R.A.F. Housing Scheme:

Houses are being erected at the Kumalo, Heany and Thornhill airstations for occupation solely by members of the Royal Air Force who are stationed in the Colony.

This project was commenced in 1949/50 and £79,250 expended during that year, and £399,258 during 1950/51.

The houses have and are being erected as follows:

Heany - a total of 188 houses of which 110 have been completed. The remaining 78 will be ready for occupation by September, 1951.

Thornhill - a total of 99 houses of which 64 have been completed. The remaining 35 will be ready for occupation in July, 1951.

Kumalo - a total of 13 houses of which 10 have been completed. The remaining 3 will be ready for occupation by July, 1951.

16. Roads:

The expenditure incurred during the period 1/4/49 to 31/3/51 was £1,919,306 as compared with the estimate for the same period under the first plan of £1,866,702. Included in the expenditure is the sum of £18,700 for airfield construction; £83,042 for recoverable loans to Road Councils and £89,310 for items of expenditure now transferred to Revenue Account.

The general road programme of the Government is the reconstruction and realignment of the main roads of the Colony to a more modern standard as a first priority, and the extension and maintenance of them as a secondary one. The construction of airfields has not as yet assumed major proportions.

The following table compares the performances for the period 1/4/49 to 31/3/51 with the programme for the period 1/4/51 to 31/3/55 on which the estimate of £5,200,000 for the period of the second plan is based:

	1949 to 1951.	1951 to 1955.
Road building: surfacing (miles)	215	700
Bridging (width 20ft.) (feet)	944	6,600
Runways (concrete in yards, width 50 yds.)	-	3,400
Runways (grass and gravel in yards, width 50 yds.)	16,000	14,700

The expenditure on the Kentucky airfield is not included in the estimate of £5,200,000 as it is provided for under Civil Aviation. The runway construction envisaged by the Department is, however, mostly in this connection.

The following table will give an indication of the road construction programme which will have to be undertaken in future years:

	Miles
Total mileage of main roads at date	3,668
Major Road Council roads which will attain main road status	240
Estimated expansion of the main road system	150
Major tourist roads	226
	4,284
Less: Mileage completed to standard as at 31/3/51	291
	3,993
Less: Mileage to be completed by 31/3/55	700
Balance for completion after 31/3/55	3,293

17. Agriculture:

The expenditure for the period 1/4/49 to 31/3/51 was £945,521 as compared with the estimate for the same period under the first plan of £1,228,000. Of this expenditure £65,684 was for forestry, £249,395 for acquisition of land and £519,704 for recoverable loans. Of the amount advanced in loans £361,827 was for ex-servicemen settlers under the Ex-Servicemen's Land Settlement Scheme, £192,325 for Conservation Committees for the purchase of equipment, £35,000 for drought relief purposes and £36,000 for an experimental project in the Mazoe Valley designed to bring badly eroded farms back into production. The saving of expenditure over the estimate was mainly on the acquisition of land.

The provision made for the period of the second plan is £1,200,000 as compared with the provision for the first plan of £2,000,000. The saving is mainly due to reductions in the acquisition of lands, the capital for the Conservation and Extension Working Account (£292,000) not being necessary, reductions in the advances necessary for ex-servicemen settlers and to the items of expenditure transferred to Revenue.

The outlay of the £1,200,000 for the second plan is as follows:-

Forestry and Sawmilling		£226,500
Acquisition of Land		194,000
Loans		779,500
Conservation Committees	120,000	
Ex-Servicemen Settlers	319,500	
Food Production	300,000	
Demonstration Farms	40,000	
		£1,200,000

Food production £300,000 is a new item.

Following on a succession of poor rainy seasons, it has been necessary to make funds available to farmers for food production in an effort to obtain a greater degree of self-sufficiency. These loans will be made on the recommendation of a Food Production Committee, and, save in exceptional circumstances, are limited to a maximum of £2,000. Further the loans are only available when financial accommodation from recognised sources such as the Land and Agricultural Bank cannot be obtained due to insufficient security or other reasons.

The loans to Conservation Committees are for the replacement of machinery etc. bought from previous loans which have either been or are in the process of being repaid.

The loans for demonstration farms provide for the development of demonstration farms, privately owned, within selected areas to show the methods and advantages of a properly planned system of farming. This project has been successfully tried out in other countries.

The loans for ex-servicemen settlers call for no comment save that £50,000 is included for food production loans. A settler under the ex-servicemen's scheme obtains advances from the Department and not from the Land Bank.

Regarding forestry, 161,639 acres of land were purchased at a cost of £90,362 between 1949 and 1951. This expenditure was met from the provision for acquisition of lands. Of this area, 35,000 acres are plantable to pines. At 1/4/49 afforestation operations were in progress on four reserves. By 1951 this number had increased to seven. The afforested area had been increased by 2003 acres in spite of drought conditions. The output of timber for the period was about 700,000 cubic feet. Much of this was converted in the sawmills and sold to the National Building and Housing Board. A forest nursery was opened at Umtali and work started on a new sawmill with a capacity of 500,000 cubic feet per annum and capable of extension. A Forestry School was also set up by the Department to train 14 foresters for service within the Department. For the period of the second plan, the progress is to be maintained on the same lines. The sawmill is expected to be completed by the end of 1951, giving an output valued at £60,000 per annum. No particular purchase of land for forestry purposes is contemplated at the moment but should suitable land come onto the market at a reasonable price, its acquisition will be considered. The development of forestry in this country is based on the broad programme of having 85,000 acres of producing plantations by 1980 and of creating forest reserves up to 5% of the area of the Colony.

18. Irrigation:

The expenditure for the period 1/4/49 to 31/3/51 was £718,336 as compared with the estimate for the same period under the first plan of £1,096,667. Of the expenditure £127,500 was for additional capital for the Irrigation Department Working Account. This expenditure will not be repeated from Loan funds.

The major project under construction during the period has been the Hunyani Poort Dam estimated to cost £1,000,000, half of which will be recoverable on completion from the City of Salisbury. This repayment has been allowed for in the estimate for the second plan. This dam is for the purpose of safeguarding Salisbury's water supply, to supply Norton and to bring under irrigation 5,000 acres of land. The Hunyani Poort dam will have a capacity of 55,000,000,000 gallons. When full, the surface area of water will be 5,000 acres. Two above average rainy seasons will be required to fill the dam.

The expenditure incurred by the Department has been entirely on the provision of water for industrial, mining, food production and urban requirements. The expenditure of £3,100,000 envisaged under the second plan is for the same purpose. Details of how it is proposed to outlay this sum are as follows:

Hunyani Poort Dam (Completion) (to safeguard Salisbury City Water Supply, to serve Norton, to irrigate 5,000 acres)	617,000
Sebakwe Scheme (to serve Que Que, to assure water supplies to gold mines, for E.S.C. purposes and for the steelworks, to irrigate 4,000 acres)	622,000
Umrodzi (or Poorti) Scheme (to irrigate 9,000 acres in a settled area)	175,000
Sugar Estates (to raise the weir £90,000 which will ensure sufficient water in a bad season for at least 1500 acres of sugar. To line canal £60,000 which will give 40% more water by saving present losses)	150,000
Popotekwe or other Mtilikwe Scheme (to serve Ft. Victoria, to improve stream flow and to irrigate 1500 acres)	345,000
Sabi Pilot Scheme (to irrigate 16,000 to 20,000 acres)	240,000
Lundi Scheme (to ensure water supplies for the Shabani asbestos mines and to irrigate land in native reserves)	47,000
Native Townships (to provide water supplies to townships to be built to house de-tribalised natives).	300,000

/ Norton Scheme .....

Norton Scheme (to provide water for a new industrial township)	500,000
Other Government Water Schemes (Melfort, Macheke, Colleen Bawn, gold mines in the Gwanda area, E.S.C. Railways etc.)	440,000
Other minor works	164,000
	3,600,000
Less: Refund from Salisbury Municipality	500,000
	£3,100,000

19. Civil Aviation:

The expenditure for the period 1/4/49 to 31/3/51 was £28,168 as compared with the estimate for the same period under the first plan of £112,167. The expenditure was in connection with the construction of airfields and landing grounds (£18,168) and the purchase of aeradio and navigational aid equipment (£10,000). This latter item is now provided for on Revenue. In 1950/51 the cost of airfield construction has been charged to the Roads Department as that Department actually carried out the work. The amount spent by that Department in this connection during 1950/51 was £18,700 making the total expenditure on airfield construction for the period £36,868.

The provision of £740,000 under the second pland is entirely for the Kentucky airfield and covers the cost of buildings etc. for civil aviation requirements and the cost of the runways. This airfield is urgently required as the present one at Belvedere is unsuitable. It is too close to a built up area and the erection of multi-storied buildings in the City of Salisbury causes a dangerous flying obstruction.

The airfield will be used for both civil and military purposes. That expenditure for military requirements is charged to Revenue and £350,000 has been so provided in the 1951/52 Estimates.

20. Trade and Industrial Development:

The expenditure for the period 1/4/49 to 31/3/51 was £136,875 as compared with the estimate for the same period under the first plan of £120,000. The whole of this expenditure was in respect of recoverable loans to infant industries, and the provision of £200,000 for the period of the second plan is in the same connection.

21. Central Mechanical Equipment:

The expenditure for the period 1/4/49 to 31/3/51 was £1,543,106 as compared with the estimate for the same period under the first plan of £1,400,000.

This Department holds, services and issues on hire to other Departments, vehicles and heavy equipment. The two major users of the equipment are the Roads and Irrigation Departments. The estimate for the period of the second plan of £1,555,000 provides for acquisitions of motor vehicles and heavy equipment such as tip-trucks, tractors earth moving machinery etc. in excess of the present establishments. Repairs and replacements are met from Revenue Funds.

STATUTORY BODIES.

22. Land and Agricultural Bank:

As at 1/4/49 gross advances to the Bank totalled £2,633,550. Refunds amounted to £376,850 leaving net outstandings of £2,256,700. By 31/3/51 the position was as follows:

Gross advances	£5,587,950
Refunds	£ 457,157
Net outstandings	£5,130,793

The Bank exists for the purpose of lending money for the purchase, development and improvement of farming land and for the carrying on of farming operations generally. It may also lend money for the purchase or building of residential property and to Co-operative Agricultural Companies. With the acute housing shortage and the phenomenal expansion of the agricultural industry the demands on the Bank are greater than estimated.

The additional capital estimated for the period of the second plan is £2,615,000 and it is required for the same purposes as before. The repayments of existing loans are substantial but insufficient for the Bank to keep pace with demand.

23. National Building and Housing Board: The main functions of this Board are:

(1) To alleviate the building shortage by constructing or encouraging the construction of the largest practicable number of dwellings and other buildings within as short a time as possible and to do all things possible to assist persons to obtain accommodation.

(2) To acquire an adequate supply of building materials and to distribute such materials to best advantage.

(3) To increase the number of persons employed in the building industry.

(4) The Board was established in conformity with the Government's policy of entering into industry where private enterprise has lagged behind or because of the economics of the project, coupled with the under developed state of the country, private enterprise has been unwilling to risk its capital. It was intended that the Board would be a temporary organisation to be closed down as soon as it had succeeded in sufficiently bridging the gap between supply and demand for dwelling houses to allow private enterprise to carry on. However, with the rise in costs of building, investment in property has become less attractive. Also, a large section of the building industry is devoted to the construction of commercial and industrial buildings. Consequently it has been necessary to extend the life of the Board. During the past year the Board undertook a considerable amount of work on a contract basis for the Public Works Department and the local Governments, the latter particularly in respect of housing for Africans.

As at the 1st April 1949, capital advances to the Board were £3,302,061. y 31st March, 1951, the amount was £5,537,061 - an increase of £2,235,000. he estimate for the same period under the first plan was £3,500,000. Interest, resently at the rate of 4% per annum, is payable on advances obtained by the oard from public funds.

Originally, the Board constructed temporary buildings of pise de terre nstruction but have now changed over to "No-Fines" concrete construction. The ildings actually erected by the Board during the calendar years 1949 - 1950 e as follows:

	1949	1950	Total
European Houses	1620	598	2218
Coloured Houses	-	68	68
African Houses	439	2008	2447
	2059	2674	4733

The Board's commitments on hand for construction of houses for local authorities are:-

European Houses	237 units
Coloured Houses	57 units
African Houses	2561 units
Total:	2855 units

The houses built on the Board's own account are let to the public or are sold whenever this is possible.

The estimate of £4,000,000 additional capital for the period of the second plan is not based on any determined building projects but on probable demands which at present show no signs of slackening.

24. Rhodesian Iron and Steel Commission:

The Commission owns approximately 24,000 acres of land in the Que Que district with extensive iron ore and limestone deposits. An intensive drilling programme to prove the ore deposits is now in progress. On the 15th May the position was as follows:-

Ore proved	4.087	million tons
Ore not fully proved	0.636	" "
Possible ore indicated to date	9.132	" "
	13.855	

The Plant at Que Que consists of one blast furnace with auxiliary plant and equipment, one 25 ton open-hearth furnace with mixer, two side-blown converters and one electric furnace. The rolling mills comprise one 21" 3 high mill and one 10" - 12" rod mill. In Bulawayo, the works owned by the Commission consist of a steel foundry, a plant for the drop forging of steel balls and one 10" and one 12" rod mill.

As at 1/4/49 advances from public funds to the Commission were £2,599,313 gross. Repayments totalled £128,237 leaving net outstandings of £2,471,076. At 31/3/51 net outstandings were £3,906,260.- an increase of £1,435,184. This compares with the estimate for the same period under the first plan of £1,250,000.

Pig iron production was 30,540 tons in 1949 and 37,467 tons in 1950. Steel ingot production for the same period was 20,431 tons and 24,280 tons. The total value of all products sold compares as follows:

1948	£97,000
1949	£257,000
1950	£570,000

£765,000 has been provided in the 1951/52 Estimates for additional capital for the Commission. The break down is:

Housing Scheme	£285,000	(total estimated cost £570,000)
Open Hearth Furnace	£350,000	(" " " £600,000)
Other purposes (building extensions, plant, diamond drilling etc.)	£130,000	
	£765,000	

The second open hearth furnace will have the effect of increasing steel production to 40,000 tons per annum.

No provision other than the £765,000 has been made in the second plan as it is expected that private enterprise will take over the Steelworks.

The development programme of the Commission is given in Part III.

25. Cotton Research and Industry Board:

The Board has been set up to develop cotton and textile industries and to supervise research work on cotton and other kindred matters. The Board is required to purchase cotton lint from any grower in the Colony.

Gross advances to the Board at 1/4/49 totalled £1,136,399. Repayments amounted to £104,269 leaving net outstandings of £1,032,130. By 31/3/51 this figure had risen to £1,233,994 - an increase of £201,864. The estimate for the same period under the first plan was £515,000. The saving was due to funds required on a short-term basis for cotton purchases being obtained from the market and not Government. The advances to the Board from public funds carry interest, presently at the rate of 4% per annum.

There is at present one spinning mill of 17,500 spindles in operation. A second mill, also of 17,5000 spindles is expected to be in operation by January 1952. In the estimate of £1,464,000 for the second plan, provision has been included for a start to be made on a third mill of 35,000 spindles, and the construction of houses for European and African employees. It is expected that by 1955 this mill will be sufficiently completed so as to have 15,000 spindles in operation.

It is expected to be expended as follows:

1951-52	£ 130,000
1952-53	£ 205,000
1953-54	£ 474,500
1954-55	£ 594,500
	£1,464,000

/the total .....

The total estimated cost of the third mill is £2,300,000 made up as below:

Land	£26,000
Mill building	525,000
European housing	275,000
Native housing	380,000
Cotton warehouse	55,000
Stores etc. warehouse	30,000
Offices	15,000
Native Canteen, School etc.	60,000
Machinery	830,000
Stores	104,000
	£2,300,000

Cotton growing has expanded greatly in recent years and there is a ready and expanding market in the Colony and in neighbouring countries for the Board's products. There are twelve weaving, knitting etc. factories in Southern Rhodesia; another company is already building a weaving shed in Gatooma with the object of starting production in 6 months time, and two new weaving companies have recently been formed. One of these is a subsidiary of an old established English public company. On present trends, these concerns will require more than the whole of the yarn production of the first and second mills on a double shift basis by 1954. On the same basis, the two mills can only produce about half the yarn required to meet the Colony's demand for cotton cloth at the present time.

The following table shows the production figures for 1948 to 1950 and the estimate for 1951 to 1954:

ALL FIGURES IN POUNDS WEIGHT

Year	Seed Cotton Produced		Cotton Seed Derived	Cotton Lint Derived	Short fall between Rhodesian lint grown and cotton consumed in spinning	Cotton Yarn Produced (2 shifts)	Cotton Yarn sold in S. Rhodesia	Cotton Yarn Exported
	Departmental Estimate	Board's Estimate						
1948	-	533,000	350,000	150,000	692,000	733,000	730,000	-
1949	-	873,000	540,000	280,000	962,000	1,081,000	768,000	168,000
1950	-	2,870,000	1,920,000	820,000	1,357,000	1,894,000	1,160,000	770,000
1951	7,500,000	6,866,000	4,613,000	2,018,000	773,000	2,428,000	1,432,000	973,000
1952	11,000,000	10,000,000	6,500,000	2,900,000	1,724,000	4,023,000	3,221,000	681,000
1953	13,500,000	15,000,000	9,750,000	4,350,000	2,581,000	6,030,000	5,770,000	360,000
1954	17,000,000	20,000,000	13,000,000	5,800,000	2,821,000	7,500,000	7,140,000	360,000

NOTE: The Departmental estimate is that of the Department of Agriculture and Lands and the Native Agricultural Department.

26. Electricity Supply Commission:

The duties of this Commission are defined in the Act as "the investigation of new or additional facilities for the supply of electricity within any area and for the co-ordination and co-operation of existing undertakings wherever required." In pursuance of this the Commission generates and distributes power, including the sale of power in bulk to local authorities.

As at 1/4/49 gross advances to the Commission totalled £5,561,350; repayments amounted to £431,950 leaving outstanding advances of £5,129,400. By 31/3/51 this figure amounted to £7,652,972, an increase of £2,523,572. This compares with the estimate of £2,200,000 for the same period under the first plan.

The estimate for the period of the second plan is £9,680,000 to be outlayed as follows:-

1951 - 52	£2,745,000
1952 - 53	£2,598,000
1953 - 54	£2,203,000
1954 - 55	£2,134,000
	£9,680,000

Broadly, the function of the Commission is to generate and supply electricty for mining, industrial (including farming) and domestic purposes. At one time, the supply was mainly for mining but the next two or three years will see the supply almost equally divided. The general expansion of the Colony has resulted in greatly increased demands for electric power and the estimate for the second plan is based on the necessity to fulfill requirements.

The following table shows the expansion of the Commission:

	Electricity Sales (millions of units).	Miles of Power Line	Revenue (All sources) £
1949 - 50	219	3700	800,000
1950 - 51	259.6	4700	973,000
1951 - 52	362.8	5700	1,250,000
1952 - 53	450.0	6700	1,470,000
1953 - 54	526.0	7700	1,635,000
1954 - 55	575.0	8700	1,750,000

The generating potential will be increased to 180,000 KW by 1955. In 1949/50 the generating plant installed and in the course of installation was 85,000 KW.

The Kariba Gorge project will not affect the present plans of the Commission in any degree. If the project is proceeded with, the switch over from thermal to hydro power will not be possible until about 1961.

A broad outline of the Kariba Gorge Scheme is given in Part III.

27. Cold Storage Commission:

As at 1/4/49 gross advances to the Commission totalled £1,357,042. Repayments amounted to £166,063 and net outstandings were £1,190,979. By 31/3/51 this figure had risen to £1,573,143 - an increase of £382,164. The estimate under the first plan for the same period was £379,551.

The main project carried out by the Commission between 1949 and 1951 was the erection of a large modern cold storage works at Ft. Victoria which is the centre of an important cattle producing area. The total estimated cost

of this is £330,000. It is expected to be completed this year. Additions to the cold rooms at the existing works in Salisbury are in hand at a total estimated cost of £40,000. These will also be completed this year.

An important part of the Commission's activities is the extension and improvement of grazing grounds. These are either leased or purchased and improvement consist of paddocking and the provision of water supplies.

The provision for the second plan is £394,000 to be outlayed as follows:

1951/52 £290,000 mainly for the Fort Victoria Meat Works £185,500; cold rooms at the Salisbury works £40,000; grazing development £70,000. The Commission is obtaining £60,000 in loans, over and above Government advances, from the Pig Industry and Dairy Industry Control Boards.

1952/53 £43,500 mainly for grazing development.

1953/54 £60,500 for grazing development. £30,000 and the balance mainly to commence erection of a cold storage works at Umtali.

To improve the meat supply, the Commission purchases cattle from Africans in Native Reserves and enters into agreements with European farmers whereby they take over native cattle and graze them until a prime slaughter condition is reached. These short-term transactions are financed by temporary loans from the market. Advances from public funds are utilised for the acquisition of capital assets only.

28. Grain Marketing Board:

This Board has only recently been set up and replaces the Maize Control Board. It has a larger scope than the Maize Control Board as, broadly speaking, it is charged with safeguarding the supply and distribution position not only of maize but of small grains, beans, rapoko, and grounds nuts. The Board obtains funds for fixed assets and basic working capital from the Government and the seasonal advances of working capital beyond the basic figure from the local market.

The Board took over the liabilities of the Maize Control Board which, together with advances to itself, totalled approximately £163,000 at 31/3/51.

The present storage owned and leased by the Board is 1,200,000 bags. It is proposed to build this up to 2,100,000 bags by 1955. This represents approximately twelve months of supply.

The provision for the second plan of £842,500 is for the construction of additional storage. In view of the labour problems and the rising cost of grain bags, storage for 500,000 bags will be fully mechanised and for bulk storage. The outlay is estimated as follows:-

1951/52	£180,000
1952/53	£157,500
1953/54	£277,500
1954/55	£277,500
	£842,500

29. Sugar Industry Board:

As at 1/4/49 the net outstanding advances from public funds were £274,725. At 31/3/51 the figure was £306,725 - an increase of £32,000. This compares with the estimate of £18,500 for the same period in the first plan.

The assets of the Triangle Sugar Estates Company Limited were taken over for £169,110 inclusive of £55,875 for goodwill. This latter figure has been written off. The purchase price is included in the amount owing to public funds by the Board.

The Board owns 43,240 morgen of land. The advances made to date have been applied towards capital assets such as mill extensions, clearing land and the provision of water supplies.

The Board plans to plant an additional 250 acres of cane each year. The following table shows increases since 1945 and estimated increases up to 1954:-

Date	Acres under cultivation	Output in tons
31/12/45	418	300
31/12/50	850	745.6
31/12/51	1100	900
31/12/52	1350	900
31/12/53	1500	1300
31/12/54	1500	1600

At present 1600 acres of land are cleared.

Provision has been made on the Irrigation estimate for the Esquilingwe weir to be raised and for the canal to be lined. These measures will ensure sufficient water in a bad season to irrigate 1500 acres of cane.

The mill is of sufficient capacity to handle the crop from 2500 acres. The marginal acreage under cane to cover expenses is reckoned to be 1500. This point will not be reached until 1953. The provision of £54,000 under the second plan is additional working capital. It is expected that repayments will be commenced in 1953.

The Triangle Sugar Estates form part of the general development scheme for the Sabi Valley. Subject to a major water conservation scheme being provided, the sugar growing potential is reckoned to be between 18000 and 20,000 acres. The remaining land can be used for agricultural experiments for determining suitable crops for production in the low veldt area of the Colony.

30. Central African Airways:

The functions of this Corporation as defined in the Act are to furnish in an efficient and economic manner -

(a) the fullest air services within the Central African Territories;

(b) air transport services from the Central African Territories to other territories in pursuance of agreements made for that purpose;

(c) air transport services from the Central African Territories to other territories to link with air transport services owned and operated by the Governments of the territories or by companies or statutory bodies or persons in other territories.

The Central African Air Authority is charged with the supervision and control of the Corporation.

The capital of the Corporation is provided by Southern Rhodesia, Northern Rhodesia, and Nyasaland in the ratio of 10:7:3. The capital advanced by Southern Rhodesia is £440,000. £200,000 was provided in 1946/47; £50,000 in 1947/48 and £190,000 in 1948/49. No further advances were anticipated in the first plan.

The capital of the Corporation has been expended in the performance of its statutory duties by the acquisition of aircraft and the provision of allied services.

The Corporation is not yet earning sufficient revenue to meet running costs and is subsidised by the three territories, in the same proportion as for the provision of capital. Southern Rhodesia's share for 1951/52 is estimated at £80,000. This is met from Revenue.

The Corporation is at present operating from Belvedere airfield. This station is very close to a built up area and the erection of multi-storied buildings within the City is creating flying obstructions. Belvedere is leased from the City Council and that body is anxious to terminate the lease.

A new major airfield, which will serve both civil and military requirements is being constructed at Kentucky, some ten miles from the City. The provision of £185,000 in the second plan for additional capital is this Colony's share of the cost of erecting the necessary administrative buildings, hangars and workshops on the new airfield.

LOCAL AUTHORITIES.

31. Prior to the 1st April, 1949, municipalities raised money by the issue of stock. Town Management Boards and Village Management Boards obtained funds either from Government or commercial sources. As at 1/4/49 outstanding advances from Government funds amounted to £1,009,069. This includes the sum of £250,000 advanced to the Bulawayo City Council in connection with the construction of the Ncema Dam.

32. There are six municipalities in the Colony including Salisbury and Bulawayo. Municipalities may borrow sums up to the equivalent of one-sixth of their rateable value. Borrowings in excess of this require the approval of the Governor which is given on the advice of the Department of Internal Affairs and the Treasury.

There are eighteen town management boards and seven village management boards. These authorities may only borrow amounts approved by the Governor.

33. In 1949, in order to avoid competition on the local money market, it was agreed that all local authorities should obtain their additional capital requirements from Government. It was necessary in 1950 to relax this rule in the case of Salisbury. This City floated a £1,250,000 loan at 4% repayable in 1962/65.

34. As at 31/3/51 net outstanding advances to local authorities totalled £6,084,147. This is an increase of £5,075,078 over the figure of £1,009,069 at 1/4/49. Gross advances during the period totalled £5,122,363 but repayments amounting to £47,285 were received. The expenditure for the same period estimated in the first plan was £6,000,000.

The gross expenditure may be broken down as follows:-

Salisbury	1,500,000
Bulawayo	1,750,000
Other Municipalities	1,712,849
Town and Village Management Boards	159,514
	£5,122,363

The advances to the municipalities are expended within their discretion on matters falling under their administration. When the loans are granted, they are related to approved estimates.

The minor authorities are advanced funds for specific purposes. The break down of advances made in 1949/50 and 1950/51 is as follows:-

For Water Supplies	78,882
Roads and streets	23,347
Native Housing	32,236
European housing	5,148
Sanitation	2,471
Electricity	6,193
Miscellaneous buildings	3,155
Plant and Equipment	8,082
	£159,514

35. For the second plan the individual programmes of Local Governments aggregated over £33,500,000 of which Salisbury and Bulawayo proposed to spend £15,000,000 and £11,000,000 respectivoly. The provision of funds from Central Government for this purpose has been set at £20,000,000 to be expended as follows:

	1951-52 £	1952-53 £	1953-54 £	1954-55 £	Total £
Salisbury	1,750,000	1,750,000	1,750,000	1,750,000	7,000,000
Bulawayo	1,500,000	1,500,000	1,500,000	1,500,000	6,000,000
Other Municipalities	1,312,500	1,312,500	1,312,500	1,312,500	5,250,000
Town & Village Management Boards	312,500	312,500	312,500	312,500	1,250,000
Contingencies	125,000	125,000	125,000	125,000	500,000
TOTAL:	£5,000,000	5,000,000	5,000,000	5,000,000	20,000,000

36. The increased demands over the first plan follow the general pattern of development which is taking place throughout the Colony. The plan provides for the minimum facilities for housing electric power and water supplies. In pursuance of Government policy all Local Governments have shown an added interest in housing for Africans. This is revealed in the following summary:

	Town & Village Management Boards	Municipalities	Salisbury	Bulawayo	Total
	£	£	£	£	£
Building - European Housing Town Halls, Offices etc.	431,300	1,564,000	3,808,000	681,550	6,484,850
Native and Coloured Housing	309,790	1,428,265	61,250	2,168,950	3,968,255
Water Supplies	253,696	1,268,200	1,942,011	2,088,600	5,552,507
Electricity Supplies	8,000	466,510	6,886,063	4,222,590	11,583,163
Sewerage (including land)	166,500	434,850	593,250	895,000	2,139,600
Roads and Bridges	172,872	699,900	1,077,680	711,000	2,661,452
Miscellaneous	46,000	222,654	864,494	143,620	1,276,768
TOTAL:	£1,388,158	6,134,379	15,232,743	10,911,310	33,666,595

37. The City Councils of Salisbury and Bulawayo generate their own power whereas the others obtain supplies from the Electricity Supply Commission. The large provision for water supplies includes £500,000 for the payment by Salisbury Municipality to Government of its share of the cost of the Hunyani Poort Dam and over £2,000,000 for Bulawayo Municipality. This is made up as to £1,008,600 for the Ncema augmentation scheme; £550,000 for the commencement of the Bembesi scheme and £530,000 for reticulation.

PART II.

RHODESIA RAILWAYS.

The Railways are owned and administered jointly by the Southern Rhodesia, Northern Rhodesia and Bechuanaland Protectorate Governments. For this reason the railways estimates of expenditure during the second plan period (1951-55) have been omitted from the Southern Rhodesia Government's plan in Part I.

When the Southern Rhodesia Government's first four year plan (1949-53) was prepared a note was made to the effect that the railways estimated expenditure during the three years 1949-52 was £20,000,000. This expenditure was required mainly for locomotives and rolling stock, renewals of permanent way and bridges, European and African Housing, deviations, etc.

It was estimated that £12.5 m. would be financed from the railways own funds and £7.5 m. would require to be raised by fresh external borrowing.

By the 1st April, 1951, the funds from the new external loans had not been received and capital account was in deficit by £2,062,000.

Some aspects of the railway development have been planned up to 1956 and beyond. Details of these plans are included in the "Memorandum of the Southern and Northern Rhodesia Inter-Territorial Railway Planning Committee to Governments in connection with Railway Development"(Annexure A). The total estimates of expenditure are summarised as follows :-

	1951/52	1952/53	1953/54	1954/55	1955/56	Total.
1.Capital Expenditure as per Budget to March 1954.	7,509,300	7,264,600	2,590,000	400,100		17,764,000
2.Forecast of additional Capital Expenditure.			3,050,000	3,950,000	1,200,000	8,200,000
3.South-East Connection.	500,000	1,500,000	1,250,000			3,250,000
4.Sinoia-Kafue Link.				500,000	6,500,000 (1)	7,000,000
	8,009,300	8,764,600	6,890,000	4,850,100	7,700,000	36,214,000

(1) Although this amount is shown in this column, its expenditure will be spread over the period of construction of the link. This is estimated at 1955/1960.

The details of the estimates of expenditure under item 1 are given in Annexure B. The expenditure under item 2 to meet roughly estimated traffic demands up to the year 1956, of which a sum of £5,000,000 has already been committed for locomotives and rolling stock. Of the total estimated expenditure of £36,214,000, £25,964,000 is for the planned development of the internal system to meet the estimated traffic offering up to 1956 and in particular, the carriage of coal north and south of Wankie. Of this latter amount the expenditure of £22,764,000 has already been authorised by the Railway Higher Authority. The balance will be considered at the next meeting of the Authority on the 27th June, 1951.

£10,250,000 .....

£10,250,000 of the total estimates is in respect of the South East Line Connection (with Lourenco Marques) and the Sinoia-Kafue Link (between Southern and Northern Rhodesia). The plans for these two projects were prepared by the Inter-Territorial Railway Development Planning Committee and will be considered by the Railway Higher Authority on the 27th June, 1951.

These new constructions were considered at the Central and Southern Africa Transport Conference held in Johannesburg in 1950. The ground survey of the South East Line Connection will be completed in 1951. The Governments of Portugal and Southern Rhodesia have engaged the services of an American firm to conduct an economic survey of the line and the other alternative lines.

During the second four year period the estimate of expenditure is as follows :-

1951/52	.....	£8,009,300
1952/53	.....	£8,764,600
1953/54	.....	£6,890,000
1954/55	.....	£4,850,100
		£28,514,000

Including the deficit on Capital Account of £2,062,000 as at 1.4.51, it is proposed to finance the above as follows :-

Northern Rhodesia Government Loan	£7,500,000
E.C.A. Loan	£5,000,000
Pension Fund Loan	£3,500,000
	£16,000,000
Further External Borrowing.....	£14,576,000
	£30,576,000

Of the £14,576,000 to be borrowed externally £10,826,000 is required to meet expenditure on the vital expansion of the internal system and £3,750,000 on the two construction projects.

ANNEXURE A

MEMORANDUM OF THE SOUTHERN AND NORTHERN RHODESIA INTER-TERRITORIAL RAILWAY PLANNING COMMITTEE TO GOVERNMENTS IN CONNEXION WITH RAILWAY DEVELOPMENT.

PREFACE.

The Southern and Northern Rhodesia Railway Planning Committees since their inception have had the following matters under review :-

(a). The development of lines of communication to ensure freedom of import and export traffic.

(b). The development of the existing Railway System and additional internal lines of communication within the Territories.

(c). They have also considered, with regard to the influence on rail transport :

(i). The Kariba Gorge Hydro-Electric scheme.

(ii). The provision of a Thermal Station on some suitable Coalfield.

SECTION 1.

HISTORICAL.

1. The Annexure to the Beira Convention of 17th June, 1950, provides :-

(a). The Portuguese undertook to complete within a period of two years a deep water ore-handling berth (this berth also to be made suitable for handling P.O.L.)

(b). To begin within two years from the date of signature of the Convention (June 17th, 1950) the construction of two permanent deep water general cargo berths. The work to be carried through to completion as rapidly as possible.

2. African Transport Working Party was formed to collect information and prepare a memorandum for the Johannesburg Conference. The Working Party prepared estimates of traffic through Beira and over various sections of the Railways up to 1955; these estimates have, however, been slightly revised in the light of subsequent information.

3. Central and South African Transport Conference (at Johannesburg) 1950.

The final Act provides :-

Recommendation (2)(i) "That the economic survey of possible alternative railway connexions between Mocambique and Southern Rhodesia which the Economic Co-operation Administration will undertake at the request of the Portuguese Government and the U.K. Government on behalf of Southern Rhodesia should be expedited as much as possible".

Since ...

Since the Conference arrangements with the E.C.A. have fallen through, but it is understood that the Portuguese Authorities are at present approaching an independent party who might carry out such a survey as was contemplated.

Sub-Committee 2. Committee 3. Annexure (d) to Appendix (ii) discloses :-

"Unanimity was reached regarding the normal sustained capacity of Beira Port when the proposed Mineral Wharf was brought into operation. The estimated capacity would then be :-

General Cargo (Short Harbour Tons)	1,796,000
P.O.L.	442,200
Chrome, etc.	1,774,800
	4,013,000 "

Since the Johannesburg Conference, at a recent meeting of the Beira Imports Advisory Committee, it was unanimously decided that, based on recent working, the capacity of the general cargo berths could be raised by .3 million short harbour tons per annum, giving a total capacity on the general cargo berths, after completion of the Ore Wharf, of 2.1 million short harbour tons.

4. Report of a Working Party appointed by the Southern Rhodesia Government to study the expansion of the Rhodesia Railways (1951-1956). (Commonly termed the Iron & Steel Working Party).

The report by this Committee was submitted in July, 1950, in which assessments of traffic requirements on the various sections of the existing Railway System were estimated. The cost of implementing the recommendations for the development of various sections of the existing Railway System between 1952 and 1956, involved the expenditure of £14 million over and above the Capital Budget for the years 1950/53. This estimate has since been increased on a further review by the General Manager (see his note of 19/2/51) and the amount involved on the same basis is £16.9 million. The Capital Budget for the period 1951/54 includes part of this expenditure, leaving a balance of £8.2 million to be provided in subsequent Capital Budgets.

The proposed programme of expansion of the existing System, as given by the Railway Administration and recommended by the Working Party, has been generally accepted by the Higher Authority, and the General Manager has been authorised to incur expenditure of £5 million in placing orders now for locomotives and rolling stock over and above the requirements for the three years ending 31st March, 1954, in order to handle the traffic estimated by the Working Party as likely to arise up to 1956.

5. Construction of the Sinoia-Kafue Cut-off.

Memorandum submitted by the General Manager of the Railways in this connexion dated 24th March, 1951. This subject is dealt with in more detail in Section VII and Annexure B.

6. ...

6. The Construction of South East Line Connexion to Lourenco Marques.

The General Manager of the Railways submitted a memorandum in this connexion dated 20th April, 1951. This is dealt with in more detail in Section VI and Annexure C.

7. The Working Party appointed to enquire into the merits of establishing a power station at the Coalfield as against continued development along existing lines,

recommended that the present system of expanding existing Thermal stations should continue and the Thermal station situated at a Coalfield was not economically practicable. (See Section IV of this report).

8. The examination of these projects ended with a meeting of the Combined Planning Committees with members of the Railway Board on the 2nd May, at which it was resolved that the two most desirable and important projects were the Sinoia-Kafue Cut-off and a South East Line connexion; it was decided that these two projects were in certain respects intimately associated and could be better dealt with in one report.

SECTION II.

FINANCIAL POSITION OF RHODESIA RAILWAYS.

9. During 1950, Officials of the Southern Rhodesia Government, together with representatives of the Railways, prepared an estimate of cost of the internal railway development, including line improvements, additional engines and rolling stock, and the development of terminals, etc., likely to be necessary during the period 1951-1956. This estimate, which included the then estimated cost of the construction of the Sinoia-Kafue Cut-off, amounted to £20 million. (See Sub-Section 4 - £14 + £6 million).

The above estimate was discussed by the Southern Rhodesia Government with the United Kingdom Treasury with a view to obtaining the backing of Treasury for loans from the London Market.

The United Kingdom Treasury were, however, unable to commit the Capital Issues Committee to the provision of funds so far in advance, and it was agreed that the whole subject should be reviewed and re-submitted after Northern and Southern Rhodesia Governments had agreed in principle on the needs of future development and the construction of new lines.

Since then, the original estimates have had to be reconsidered in the light of rising costs and increased traffics, and it is now estimated that the amount of £16.9 million referred to in Sub-Section 4. should be increased to £20 million, that is exclusive of the cost of the Cut-off. Any portion of this sum which is found later not to be required, could go towards the cost of one or other of the major projects now under consideration.

10. ...

10. Up to the end of March, 1951, about £15 million have been spent over the last four years on capital account, mainly on locomotives and rolling stock, housing for staff, both European and African, and on improvements to the existing lines. The estimates for capital expenditure on the existing lines, that is for provision of new works, improvements to grades and curvature, new marshalling yards, signalling, and locomotives and rolling stock, etc., are included in the Capital Budget of the Railway for the triennium 1951/54 and they total £17.764 million on capital account alone. A forecast of requirements to meet roughly estimated traffic demands up to the year 1956 indicated that at least another £8.2 million will be necessary, against which commitments are already being incurred up to £5 million. On April 1st, 1951, the beginning of the financial year 1951/52, there is an anticipated deficiency of £2.062 million.

11. The position as at present foreseen, and <u>exclusive</u> of :

(a). any other capital expenditure which may be necessary up to 1956 over and above the £8.2 million mentioned above, and

(b). <u>any</u> expenditure on new lines, such as contemplated in this memorandum,

is therefore as follows :-

	Million.
Budget expenditure 1951/54 ...	£17.764
Later expenditure to 1956 ...	8.2
Deficiency as at 1st April, 1951 ...	2.062
Total:	£28.026

12. Against the above, the following finance is available or in view :

	Million.	
N.R. Government loan ...	£ 7.5	(recently raised).
E.C.A. Loan ...	5.0	
Loan from Pension Funds ...	3.5	
Total:	£ 16.0	

There will, therefore, be a deficiency of £12.026 million to be raised, and, as explained, this is altogether irrespective of the costs of new Railway connexions.

E.C.A. financial assistance has been separately mentioned to the two Governments as possible both for the construction of the Sinoia-Kafue Link and for the South East Line connexion.

The attachment (Annexure A) to this report is put forward as a suitable form of approach.

SECTION III.

DEVELOPMENT OF IMPORTS AND EXPORTS THROUGH THE PORT OF BEIRA.

13. ...

13. The estimates of the Railway Administration are given below in Short Harbour Tons. (See page S.10 Annexure C):-

	Traffic Demands.		* Estimated Capacity after construction of the Mineral Wharf.	
General Cargo Wharfs.	1955.	1960.	1955.	1960.
Imports	959,000	1,213,000		
Exports	1,027,000	1,104,000		
	1,986,000	2,317,000	2,100,000	
Mineral Wharfs.				
Chrome	480,000	480,000	1,823,000	
P.O.L.	315,000 DWT	394,000 DWT	394,000	
	795,000	874,000		
Grand Total:	2,781,000	3,191,000	4,317,000	

* These estimates are exclusive of the proposed two General Cargo Berths, but include .3 million S.H.T. extra over existing general cargo berths agreed to at the recent Beira Imports Advisory Committee meeting. (See Sub-Section 3).

It must be borne in mind that although there may be some spare capacity on the mineral wharf, it cannot be used for the movement of general cargo in any appreciable quantity, if at all.

A similar independent estimate over the general cargo wharfs was made by Southern Rhodesia Government Officials and is given below :-

	1955.	1958.	Capacity.
General Cargo Wharfs ...	2,320,000	2,720,000	2,100,000

The Railway Administration estimated that the two proposed general cargo berths will be capable of handling .6 million S.H.T. per annum - while the second estimate has allowed .5 million S.H.T. per annum.

Between the years 1955-60, the Railway Administration has allowed an increase on import traffic at the rate of 5% (simple) per annum, on the grounds that, although the present rate of increase is considerably higher than this, it will be unlikely that these increases will be sustained if based on the comparatively high level of 1955.

The second estimate includes :-

A 10% margin of error on 1955 estimate; and an increase of 300,000 tons on general import traffic between the years 1955 and 1958.

14. This Committee is conscious both of the number of assumptions which have to be made when planning so far ahead and the consequent tendency towards error and the difficulty of mutual agreement with the Portuguese as to the sustained capacity of the Port of Beira. They are of the opinion that the Railway Administration

estimate ...

estimate of traffic increases is probably conservative, while the second estimate is perhaps high, it may well be that traffic levels somewhere between these two estimates may be realised.

The Committee considers that there is considerable danger in allowing too small a margin of spare capacity to cover errors in estimating and traffic surges.

Without the two proposed General Cargo Wharfs.

1955. 1st Estimate spare capacity 114,000 S.H.T. or 5.74%
2nd " exceeds " by 220,000 "

If the two proposed General Cargo Wharfs are provided.

1960. 1st Estimate spare capacity 383,000 S.H.T. or 16.57%
1958. 2nd " exceeds " by 120,000 "

15. Conclusions.

What does emerge from these two estimates regarding the General Cargo Wharfs is :-

Unless some other relief is afforded :

(a). at least one of the two proposed General Cargo wharfs must be constructed and in commission before 1955.

(b). the provision of General Cargo wharfs, additional to the two proposed, must be well in hand at the latest by 1960. The experience of the next few years may well disclose the necessity for the completion of these additional wharfs before 1960.

SECTION IV.

RAILWAY TRAFFIC IMPLICATIONS.

16. Beira-Umtali Section.

This section, which is operated by the Portuguese runs for the first 61 miles to Vila Machado over fairly easy grades across the Pungwe Flats. These Flats are liable to seasonal flooding, and the Railway line is at times in serious danger. The last attack, though causing no actual breaches, was in March, 1949, when through communications were interrupted for 2½ days.

After leaving Vila Machado, the line climbs the escarpment to Umtali (a distance of 142 miles) which is 3,500 feet above sea level; heavy grades and curvature are encountered on this section.

The Rhodesia Railway Administration have made the following estimates of traffic in short dead weight tons (page S.15 Annexure C) :-

	Imports.	Exports. *
1955	858,000	1,390,000
1960	1,074,000	1,459,000

* Exclusive of empty tank cars.

The ...

The loaded direction is the down direction, i.e., from Umtali to Beira, but owing to grades and the resulting difference in permissible engine loads, the traffic direction between Vila Machado and Umtali will be the up direction.

An independent party of Southern Rhodesia Government Officials have estimated :-

Imports.

1955 ..... 1.1 million tons.
1958 ..... 1.39 " "

The disparity between these two estimates is to some extent accounted for by the assumption in the latter that P.O.L. will increase at the rate of 10% per annum compound. The Committee recognises that these are only estimates which may not be realised.

17. At the Johannesburg Conference, the Portuguese estimated the capacity of this section in the up direction to be 14 trains per day, giving, with the same general type of traffic, a total of 1.6 million short tons per annum. The General Manager of the Rhodesia Railways has, however, expressed the opinion that this estimate may be on the high side.

18. This Committee is of the opinion that, provided the Portuguese take in hand the necessary development schemes, and sufficient engines are available, the capacity of this section will not be a limiting factor up to 1960, but that by then it may be nearing saturation. This question will require frequent re-examination in the light of future events.

19. Salisbury-Umtali Section (170 miles).

The present alignment runs through heavy country and the ruling grade is 1/50, but owing to the high incidence of curvature, the general standard of the route is a virtual 1/40.

Although fraught with some difficulties, especially in the provision of additional crossing stations on a standing grade, it is thought possible by relatively moderate expenditure to raise the capacity to an equivalent of 12 trains each way per day. The present average train density being 10.13 trains per day.

20. The General Manager (see Annexure C page S.17) estimates that the train density on this section is likely to be :-

1955 ..... 14 trains per day.
1960 ..... 15-16 " " "

The independent estimate prepared by Southern Rhodesia Government Officials allows for still greater increase in traffic in the up direction and in the down direction (i.e., the traffic direction Salisbury to Umtali); these estimates, if realised, would result in the capacity of this section running out even earlier.

21. The General Manager states that he cannot at this stage give any real indication of the extent of the financial requirements to raise the capacity of this section ...

section to meet 1960 traffic demands; they would certainly be considerable but it might not be necessary to go to the length of complete regrading, he puts a tentative figure as £1½ million for these improvements; it might well be more.

22. This Committee notes that unless it is possible to afford some material relief to the Salisbury-Umtali section before 1955, it will be necessary to undertake works of some magnitude to develop the capacity of this section to meet the traffic requirements in 1955 not fully contemplated at present.

23. Gwelo-Salisbury Section (187 miles).

The standard of this section is 1/80 compensated. The General Manager estimates that it will be necessary to provide for the following train density on this section (See Annexure C page S.17) :-

	1955.	1960.
The present average train density being		10.44
Probable train density ..	16-17	19

Plus probably a daily local Goods train between Gwelo and Gatooma.

Necessary developments to meet the above traffic demands up to the 55-56 period are in hand and financial provision for these works has been included in the estimate mentioned in Section II. of this report.

24. Bulawayo-Gwelo Section (110 miles).

The standard of this section is 1/80 compensated. The General Manager estimates that it will be necessary to provide for the following train densities on this section :-

	1955.	1960.
The present average train density being		10.7
Possible train density ..	17	21

Plus West Nicholson Branch line trains between Bulawayo and Heany (18 miles) and Shabani Branch line trains between Somabula and Gwelo (20 miles).

Plans have been formulated to develop the capacity of this section to meet 1955-56 traffic and financial provision has been included in the estimates already mentioned. These developments include the installation of Central Train Control and it is hoped that the first portion Bulawayo to Somabula will be brought into use in 1951.

25. Wankie-Bulawayo Section (215 miles).

The standard of the section between Bulawayo and Dett is 1/100 compensated or better, but the section between Dett and Wankie runs through very heavy country and the ruling grade is 1/61 uncompensated. Arrangements have been made to regrade the latter section to permit of a through load from Wankie to Bulawayo of 1,300 tons; the capital cost of the whole work will be about £1¼ million and the necessary Budget provision has been made; work has already commenced, but for the time being a small portion is being left as it is.

26. ...

26. The traffic direction is down from Wankie to Bulawayo and the General Manager estimates that it will be necessary to provide for the following train densities :-

	1955.	1960.
Present average train density being		9.11
Probable train density	14-15	17-18

These figures assume the regrading of the Wankie-Dett section.

27. Necessary developments to meet the above traffic demands up to the 1955-56 period are planned and financial provision for these works has been made.

28. Wankie to Ndola (665 miles).

The traffic direction on this section is the up direction, i.e., Wankie to Ndola.

It is not anticipated that the section will approach saturation in the 1955-56 period and financial provision for necessary development to meet anticipated traffic demands has been made.

Section.	Present average train density.	Estimated train density which will have to be provided for. 1955.	1960.
Wankie-Livingstone	8.33	12	13
Livingstone-Zimba (1)..	7.96	16	18
Zimba-Monze		11	11
Monze-Kafue	8.18	11	12
Kafue-Lusaka (2)		11	12
Lusaka-Broken Hill	10.84	11	12
Broken Hill-Ndola	8.82	11	11-12

Note 1. Trains on this section are double headed. Regrading of this section is planned.

Note 2. Heavier engines are on order for the sections north of Kafue and this has been taken into consideration in these estimates.

29. Conclusions.

(a). The Beira-Umtali section may be approaching saturation by 1960.

(b). Unless relief can be provided for the Salisbury-Umtali section, major improvements to increase its capacity will have to be completed before 1955.

(c). That with the exception of major improvements to the Salisbury-Umtali section, financial provision to develop the whole of the existing Rhodesia Railway system to meet 1955-56 traffic requirements has been included in the estimate mentioned in Section II of this Note.

30. This Committee has also considered the implications on transport of the proposed Kariba Gorge Hydro-Electric ...

Hydro-Electric scheme.

If plans are considered at once, it might be possible to bring this scheme into operation somewhere between 1961 and 1965 when it would relieve the Railways of the necessity of providing transport for part of the large volume of power house coal, especially in Southern Rhodesia.

It is to be noted, however, that facilities, e.g., engines, rolling stock, line and terminal developments, etc. for moving power house coal will have to be provided right up to the time when the Hydro-Electric scheme comes into operation, and would then become redundant unless large increases in other traffic, at present unforeseen, occur which require the use of these facilities.

31. The General Manager of the Railways made a suggestion that as an interim measure a Thermal station of about 100,000 K.W. should be installed at a Coal-field instead of its equivalent at the various local centres. If this were completed by 1955, it would save the Railways heavy expenditure on development which might become redundant when the Hydro-Electric schemes came into operation.

A Working Party was appointed to examine this problem and it came to the conclusion that the Hydro-Electric project scheme should be pushed forward with, but that the Thermal station was impracticable. This Committee understands that this matter is under further consideration by the Southern Rhodesia Government.

SECTION I.

BEIT BRIDGE - WEST NICHOLSON CONNEXION.

32. Considerable pressure has been encountered from the South African Railways both before and during the Johannesburg Conference, for the immediate provision of this connexion, on the grounds that the capacity of the present Mafeking route is inadequate for the free movement of imports to Rhodesia from overseas via the Union and from the Union itself.

This pressure has been resisted on the following grounds, irrespective of any political consideration there may be :-

(a). The inherent defects of the West Nicholson Branch would make its conversion to main line standards most costly.

(b). By the development of water supplies and the supply of additional locomotive power, etc., the capacity of the Mafeking section can be increased to cover requirements for some considerable time to come. Funds have been provided for water supplies and work is in hand, and additional locomotives are on order.

(c). From a railway and a national point of view, while being of considerable financial and economic benefit to the Union of South Africa, it would result in a serious loss of revenue to the Rhodesia Railways over the Southern Section by transfer of revenue to the S.A.R.

As ...

As stated in Sub-Section 3 of this report, the final Act of the Johannesburg Conference recommended that the then proposed independent examination by an E.C.A. team of the merits of the Beit Bridge and alternative connexions should be carried out as soon as possible.

Arrangements for this examination have fallen through and further delay in commencing the Kafue and South East Line projects is likely to be fraught with some danger to the economy and trade of the Rhodesias. In the circumstances, and to avoid any misunderstanding with a neighbouring friendly State, it is desirable that the Government of the Union of South Africa should be advised as soon as possible of the wishes and intentions of the Governments concerned.

SECTION VI.

SOUTH EAST LINE CONNEXION.
(Annexure C).

33. Justification.

(a). The provision of a connexion to an additional East Coast Port (Lourenco Marques) where spare port capacity exists.

It has been shown in Section III of the report that the Port of Beira will be inadequate to deal with traffic demands even before 1955 without the expansion contemplated in the Beira Convention. By 1960, even with the two additional General Cargo berths which are being planned, it will have again reached or be nearing saturation.

(b). The existing alignment of the Beira Railway is vulnerable in respect of damage from flooding in the Pungwe River. Serious interruptions on this account would leave the Mafeking Section and to a very minor degree, the Lobito Bay route, as the only outlets from the two Rhodesias.

(c). It will afford relief to the heavily loaded Salisbury-Umtali Section which otherwise would require improvements of a major nature by 1955.

It will also afford relief to the Somabula-Salisbury Section of the main line at least equivalent to that which might be provided by the Sinoia-Kafue Cut-off. Such relief could come much earlier.

(d). It would assist in the opening up of the territory traversed.

34. Physical Characteristics.

A survey of the possible route is at present being carried out. The line will probably take off from the present rail system somewhere between Bannockburn and Shabani, this branch is already to main line standards as far as Bannockburn. The line will run down from the Doro range to the low veld country, a distance of about 20 - 30 miles, from there it will

follow ...

follow the watershed between the Lundi and Nuanetsi Rivers to the Portuguese Border. The total length of new construction to the border would probably be about 180 miles.

With the exception of the first 20 to 30 miles, which is through heavy country (possible maximum standard 1/80 compensated), the route runs through relatively easy country without major river crossings, and although in the initial stage it would probably be constructed to a standard of 1/80 compensated, ordinary improvements after opening to traffic could raise the standard to 1/120 or even better.

This route presents no constructional difficulties and the General Manager considers that survey work can be completed before the end of this year, he estimates, if a decision were reached at once and there are no delays for materials or labour or other unforeseen circumstances, that construction to the border could be completed by the end of 1954.

The distance from the Border to Portuguese rail head at Guija (132 miles from Lourenco Marques) on the South side of the Limpopo, is likely to be about 160 miles and is through even easier country than on the Rhodesia side. It is understood that the Portuguese survey to their Border will be completed by the end of the year. It is also understood that the Portuguese intend to span the Limpopo in the vicinity of Guija with a timber pile bridge as a temporary measure until finality is reached regarding their irrigation schemes in that area.

35. Financial and Operating Results.

A detailed estimate cannot be prepared until the survey is completed. The General Manager estimates that the possible cost of construction might be in the nature of £3¼ million and that loan service charges on the same basis as for the Kafue Cut-off might amount to £.23 million per annum.

Also, on the same basis as for the Kafue Cut-off, the loss on operating the section in 1960 might amount to £55,000 per annum, while the reduction of net revenue to the Railway System as a whole might amount to £188,000 per annum.

It will be seen that while the project is not likely of itself to be financially profitable for some time to come, it will be much less unprofitable than the Kafue Cut-off.

The General Manager is also of the opinion that the capital cost of new construction to the Portuguese might be in the nature of £2 million.

36. New Traffic Generated.

It is known that there is a number of deposits of various minerals in the Belingwe area and that copper and wolfram exist nearer the Portuguese Border. Much of the territory traversed is believed to be suitable for agriculture once water is made available, and the Triangle Sugar Project situated just north of the junction of the Lundi and Mtilikwe Rivers, about 30 miles from the new line, has certain possibilities. ...

possibilities.

These potentialities may take some time to develop.

37. Relief to the Present Route and Port of Beira.

(a). The following relief may be afforded to the existing Main Line :-

	Train Denisities.			
	1955.		1960.	
	Without the S.E.L.	With the S.E.L.	Without the S.E.L.	With the S.E.L.
Somabula-Salisbury	16-17	14	19	16-17
Salisbury-Umtali	14	11	15-16	11-12
Vila Machado-Umtali	13	9	14	10

(b). Estimated relief to Port of Beira (without 2 additional General Cargo Berths).

	Estimated General Cargo Traffic through Beira.		
Capacity	1955.	1960.	
2,100,000 without S.E.L.	1,986,000	2,317,000	S.H. tons.
with "	1,405,000	1,644,000	" "
Estimated relief afforded	581,000	673,000	S.H. tons.

(c). Even assuming that these estimates may be on the low side, it is evident that if the South East Line is constructed there will be little danger of Beira Port reaching saturation before 1960 (even without two General Cargo Wharfs), and that the development of the Salisbury-Umtali section can be postponed to well after 1955.

38. Conclusions.

(a). From a railway point of view the construction of the South East Line is not likely to be financially profitable for some time to come but it will be less unprofitable than the Sinoia-Kafue Cut-off.

(b). The development of the territories traversed by the new line is dependent to a large extent on the provision of a railway.

(c). Until the Kafue Cut-off is completed, the South East connexion on a mileage basis, would place the whole of the present railway system west of Gwelo and its branches within the sphere of influence of Lourenco Marques.

(d). It would provide an alternative and possibly less vulnerable route to the sea for both Southern and Northern Rhodesia and access to a better port.

(e). ...

(e). The main justification, however, for this new line is that it would assure free movement of Imports and Exports to both Southern and Northern Rhodesia for many years to come.

(f). At the same time it would save expenditure on the development of the Salisbury-Umtali section. Such development would be most costly and, even then, that route would be in danger of again becoming inadequate by 1960. If the South East Line were provided subsequently, the construction would be redundant for some long time to come.

39. There do not appear to be any grounds for anticipating any reluctance on the part of the Portuguese to the scheme, indeed they might be expected to welcome the increased use of Lourenco Marques. They would secure savings in the development of Beira provided they took an early decision in respect of their part of the construction of the S.E. Line. The Portuguese Government are committed, under the Beira Convention, to heavy capital expenditure on two deep water berths. The implementation of the scheme now proposed could bring about a saving of this expenditure, if agreement on this could be reached by the Governments, but care would have to be exercised that release from the obligations of the Convention is not implied without a definite assurance by the Portuguese Government that the S.E. connexion is proceeded with under conditions similar to those laid down in the Beira Convention in respect of Beira development.

The urgency for this project is dealt with in Section VIII.

SECTION VII.

SINOIA - KAFUE CUT-OFF.
(See Annexure B).

40. Justification.

(a). The proposed Cut-off will provide an alternative and shorter rail route (estimated 527 miles shorter) from Northern Rhodesia, including the Copper Mines, to the sea. The present route has two vulnerable points :-

(i). The Bridge across the Kafue, which river is liable to periodic flooding.

(ii). The Victoria Falls Bridge. The main arch of this bridge is 500 feet long and spans the river gorge which is some 350 feet deep.

If either of these bridges were destroyed or put out of use for any reason, through communications, apart from the Lobito Bay route at present not fully developed, would be severed and replacement would be difficult especially in the latter case.

(b). It would shorten the distance between secondary industries in the Salisbury area and Northern Rhodesia.

(c). The shorter rail route should bring about a reduction in freight charges subject to whatever ...

whatever implications there may be in the Tripartite Agreement referred to in Section X in respect of imports through the Port of Beira.

(d). A connexion at least as far as the Zambesi would be essential for the construction of the Kariba Gorge Hydro-Electric project.

(e). It would afford relief to the Wankie-Salisbury section of the railway and to a lesser extent to the Wankie-Kafue section.

(f). It would assist in the opening up of the territory traversed.

41. Physical Characteristics.

The route generally runs through very heavy country especially on the escarpments on either side of the Zambesi Valley. Reconnaissance surveys have been carried out but these would have to be checked and certain alternatives examined. The possible routes would be :

(a). To take advantage of the dam of the Hydro-Electric project and thereby probably reduce the cost of the railway, but at the same time probably increase considerably the time for completion of the railway.

(b). Retain the Chirundu bridge crossing and provide a branch line to either the north or south of the Zambesi, to the dam site to assist in the Hydro-Electric scheme.

(c). To connect on the Northern Rhodesia side with the existing railway line at either Kafue or Lusaka. The latter is probably preferable as it avoids dependence on the present Kafue bridge, though of course a new crossing of the Kafue would be necessary relatively close to Chirundu. The extra cost of this bridge would in such an expensive railway be of little importance.

The route would involve about 238 miles of new construction and 95 miles of improvements to the Salisbury-Sinoia branch. In addition, a further 20 miles might be required for the branch to the dam site. The cost of this, however, would be a reasonable debit to the Hydro-Electric project.

As pointed out, much of this route runs through extremely difficult country and the General Manager has expressed the opinion that final survey and location will take two full working seasons, after which, given that there are no delays caused by shortage of material, labour or other unforeseen eventualities, construction will take about 5 years.

42. Finance and Operating Results.

It is not possible to estimate the cost of construction with any accuracy until final survey is completed, but the General Manager has stated that, based on the present level of prices, the capital

cost ...

cost will be in the nature of £7 million and service charges based on 3½% p.a. interest, and 1% Sinking Fund, and usual depreciation charges, will amount to between £.48 and £.49 million per annum.

Fluctuations in traffic, probable revision of the present rates structure, and uncertainty as to working costs, make any estimate of operating results speculative. The General Manager has, however, hazarded that there will be an annual reduction of net revenue to the Railway System as a whole of £.576 million in 1965, including the loss in actually operating the Cut-off which might be about £.189 million p.a.

All the above estimates are of necessity speculative, but it can be said with some certainty that the construction of the Cut-off from a railway point of view will not be financially profitable in the foreseeable future. As against this are strategic and commercial advantages to the two Rhodesias as a whole which, however, it is impossible to assess in £ per annum.

43. New Traffic Generated.

There are known to be deposits of copper, coal, iron ore and limestone in the territory adjacent to the proposed alignments, there are also agricultural possibilities both on the high land south of the Zambesi and in the Zambesi Valley itself where irrigation is contemplated when the Kariba Dam is completed. These possibilities, however, require further exploration and subsequent development may take some time; without a railway they are not likely to materialise at all. There are proposals for the production of sugar cane north of the Zambesi which the Committee understands will be developed in any case.

44. Relief to Parent System.

It is anticipated that diversion of traffic via the Cut-off will reduce the train density on the Wankie-Salisbury Section by about 2 trains per day and the Wankie-Kafue section by about 1 train per day.

45. Conclusions.

(a). From a railway point of view the construction of the Cut-off is likely to be a financial liability for some years. Against this, there are strategic and commercial advantages to the territories which it is not possible to assess.

(b). Development of the territories traversed by the proposed alignment is largely dependent on the construction of a railway.

(c). The Cut-off is essential for the construction of the Kariba Gorge Hydro-Electric project.

(d). The proposed line will reduce the distance from Northern Rhodesia to the sea by 527 miles.

(e). Its provision would remove the effects of the vulnerability of the existing railway

line ...

line. Isolation of Northern Rhodesia from the East Coast would make it difficult for that territory to export the present quantities of copper, and in fact, difficult to sustain its existing population.

(f). The Sinoia-Kafue link would increase the dependency on the route to Beira, with consequences which are dealt with later, unless an alternative route to the East Coast were available.

SECTION VIII.

RELATIVE URGENCY FOR THE SOUTH EAST LINE AND THE SINOIA-KAFUE CUT-OFF.

46. This Committee considers that both these projects are not only desirable but that there is a considerable urgency for their completion at the earliest possible date. It feels, however, that if both projects were taken in hand at the same time, concurrently with other major works envisaged in the territories, and especially planned Railway works which must not be interfered with, there would be considerable danger that the consequent dispersal of constructional effort might delay the completion of both projects. The General Manager has held that two major constructions, with all other work which must progress, cannot be carried out simultaneously and certainly not at the speed which is desirable.

Each project has its peculiar demand for priority, the first owing to the urgent necessity for a connexion to an additional port to ensure free movement of Imports and Exports to both Rhodesias, and the second on the grounds of vulnerability of the line of communication with and improved economy of Northern Rhodesia.

47. This Committee, having considered the various factors, would set out the arguments as follows :-

Assuming that the S.E.L. is constructed first, and assuming work is begun by the beginning of 1952, with completion in 1954, which should enable the construction of the Sinoia-Kafue Cut-off to follow immediately since the survey should then be available, work being completed by the end of 1959 or in 1960 :

(a). <u>The Construction of the South East Line first:-</u>

(i). would on the above assumptions solve the Import and Export problems of both Rhodesias for many years to come.

(ii). would make unnecessary, at least until well after 1960, the costly development of the Salisbury-Umtali section, and the provision of two General Cargo Wharfs at present being planned.

(iii). would provide an alternative route to the sea in the event of interference to traffic ...

traffic on the Beira Railway.

(iv). if construction were carried out to the programme it could continue without interruption whilst the survey of the Sinoia-Kafue line is undertaken. This would avoid the lapse of two years for major construction.

If the S.E.L. were afforded second priority, it might be delayed until 1961.

whereas

(b). <u>The Construction of the Sinoia-Kafue Cut-off first :-</u>

(i). would provide Northern Rhodesia with an alternative exit to Southern Rhodesia by 1958 instead of 1959 or 1960.

(ii). would necessitate major and costly development of the port of Beira and of the Salisbury-Umtali section right up to 1961, the possible date of completion of the South East Line. When the latter was completed such expenditure would become largely redundant for some time.

It is to be noted that these developments would have to be carried out concurrently with the construction of new lines, and this would place a great strain on available constructional effort.

(iii). would provide a measure of relief to the Wankie-Salisbury section but none to the Salisbury-Umtali section which is much nearer to saturation and much more difficult to improve.

further,

(c). The event of a War, say, within five years' time would probably find neither of these projects completed if the Cut-off were taken in hand first, in such eventuality the Import and Export traffic of both Rhodesias might be endangered.

48. On these grounds the Committee consider that the construction of the South East Line and the final survey of the Sinoia-Kafue Cut-off should be taken in hand at the earliest possible moment; and that construction of the latter should follow completion of the survey as soon as possible, on the condition that it does not in any way delay completion of the South East Line to which first priority should be afforded as it satisfies what the Committee feels is the basic problem of the two territories, i.e., a remedy to the limitations of the Beira route and the Port of Beira.

49. The Committee, however, records, at the request of Northern Rhodesia representatives, that should finance or materials not be available for both projects, then the Governments concerned should reconsider the matter of priority, on the grounds mainly of the vulnerability ...

vulnerability of the existing rail route to Northern Rhodesia. It was felt, however, that if E.C.A. were to decline assistance for both of the works as part of an overall development plan, they might, in granting assistance, specify for which project it was to be used.

SECTION IX.

CONSTRUCTIONAL PROGRAMME.

50. The Committee has accepted the following programme for construction as reasonable :-

1951/52. Commence construction of the South East Line.
Commence final survey of the Sinoia-Kafue Cut-off route.

1953. Complete survey of Cut-off.

1954. Complete construction of the South East Line.

1955. Commence construction of the Cut-off.

1957/58. Complete construction of Cut-off as far as the Zambesi Valley and to the site of the Kariba Gorge Hydro-Electric project.

1959/60. Complete construction of the Sinoia-Kafue Cut-off.

It must be understood, however, that this programme is contingent on :-

(a). Construction of the South East Line must be started at the latest very early in 1952.

(b). There are no delays caused by shortage of materials and labour or other unforeseen circumstances.

(c). A satisfactory solution to the negotiations which must be undertaken with the Portuguese Government.

51. It is, however, pointed out that the Sinoia-Kafue Cut-off is through very heavy country, especially on the escarpments of the Zambesi Valley, and it may be found impossible to carry on construction during the rainy season, in which case this project might take longer to complete.

In spite of the Committee's support of the contention that the territories cannot sustain two such major Railway construction works at the same time, together with so much other heavy railway work which must progress, it might be found possible, as for instance if Portuguese labour were made available, to start work on the Cut-off in 1954, before the final completion of the South East Line, in which case it might not be unreasonable to assume that the Cut-off could be advanced.

52. The General Manager has stressed the very urgent necessity for placing orders for track and

mechanical ...

mechanical equipment; unless such orders are placed at once, with the pres nt shortage of steel, great difficulties are likely to be experienced, and the whole programme disorganised.

53. The Committee would draw attention to the fact that the programme debated above contemplates a connexion to the Hydro-electric dam site not before 1957/58 and they consider there is, in any case, little hope of an earlier Railway service being available.

SECTION X.

INTERNATIONAL AGREEMENTS.
(See Annexure C).

54. Under the Beira Convention, the general obligation is to use Beira to its full capacity and not to permit any discrimination against Beira traffic. The position of Lourenco Marques in relation to Beira would require clarification.

55. The Tripartite Agreement, which does not expire until 1970, provides that certain specified preferences in favour of Beira over Union Ports at Bulawayo and places north thereof in the direction of the Congo, should not be exceeded. This would definitely affect rating via the Sinoia-Kafue Cut-off. Moreover, there is the general obligation on the Rhodesia Railways and Southern Rhodesia Government "not to take or initiate any action which may directly or indirectly divert import traffic from Union ports" to the port of Beira.

This Agreement, and the recommendation of the Final Act of the Johannesburg Conference referred to in Section V, call for negotiations between the Governments concerned as soon as possible.

The Committee considers that neither the Beira Convention nor the Tripartite Agreement should militate against an early decision by Governments on the proposals now put forward.

.../...

SECTION XI.

RECOMMENDATIONS.

56. This Committee recommends the following action :-

(a). That an application should be made to E.C.A. for financial assistance towards the two projects as one development work in the sequence proposed, the combined cost of which is likely to be £10.25 million.

This approach should be made without delay and the urgency emphasized of a decision being made at an early date.

For purposes of financial commitments, the requirements might, on the programme given in Section IX, be stated as follows :-

1951	£0.5	million.
1952	£1.5	"
1953	£1.5	"
1954	£1.0	"
1955	£1.5	"
1956/1959	£4.25	"
	£ 10.25	million.

(b). An approach should be made to the Portuguese regarding the construction of the line between Guija and the Portuguese Border. This is equally urgent. Having made this approach, discussions should proceed between the two Railway Administrations. Thereafter, formal agreement with the Portuguese Governments should be concluded as early as possible in accordance with the recommendation in Section X.

(c). The implications of the Tripartite Agreement and the final act of the Johannesburg Conference, mentioned in Sections X and I and V of this report, should be examined and discussed by the Governments concerned as soon as possible.

(d). That authority should be given, as early as possible, for the placing of orders for railway track and mechanical construction equipment.

23rd May, 1951.
ne/G.

ANNEXURE 'B'.

RHODESIA RAILWAYS.

BUDGET 1951-54.

	CAPITAL.				
	1951/52	1952/53	1953/54	Carry forward beyond 1954	Total.
Traffic and operating facilities.	1,100,550	517,750	596,600	105,000	2,319,900
Passenger Amenities.	-	-	-	-	-
European Housing.	1,903,500	365,500	-	-	2,269,000
African Housing.	389,500	304,200	318,900	-	1,012,600
Renewals of Permanent Way and Bridges.	216,850	190,850	166,200	39,900	613,800
Workshops, Stores, Engine Sheds etc.	756,000	185,250	58,100	-	999,350
Administrative Buildings and General Requirements.	58,650	-	-	-	58,650
Staff Amenities.	1,800	300	-	-	2,100
Locomotive and Rolling Stock.	3,959,000	4,456,500	56,000	22,000	8,493,500
Road Motor Vehicles.	94,000	-	8,000	-	102,000
Branch lines, Extensions, Deviations, etc.	402,600	288,900	271,000	224,000	1,186,500
Land.	86,100	19,000	6,000	2,000	113,100
Water Supplies.	326,200	241,900	9,200	7,200	584,500
Unforeseen Works.	9,000	-	-	-	9,000
TOTAL:	£9,209,250	£6,664,650	£1,490,000	£400,100	£17,764,000

PART III

SUMMARY OF PARTS I AND II

AND CONTINGENT ITEMS NOT PROVIDED FOR

E S T I M A T E D E X P E N D I T U R E

Part I	1st Plan (1949-53)	2nd Plan (1951-55)
Government Departments	£21,530,362	£25,000,000
Statutory Bodies	13,406,055	20,000,000
Local Authorities	12,000,000	20,000,000
Contingencies	1,063,583	
Part II		
Rhodesia Railways 1949/52	20,000,000	28,514,000
Deficit on Capital Account		2,062,000
	£68,000,000	£95,576,000

FINANCE

Part I				
Local Loans	19,000,000		19,500,000	
Other Local Receipts	8,000,000	27,000,000	12,670,000	32,170,000
External Loans		21,000,000		32,830,000
Part II				
Rhodesia Railways				
Internal Loans		12,500,000		3,500,000
External Loans		7,500,000		27,076,000
		£68,000,000		£95,576,000

The total amount of new loans to be raised externally for the second four year plan period is:-

For Government (Part I)	£21,460,000
For Rhodesia Railways (Part II)	14,576,000
	£36,036,000

CONTINGENT ITEMS NOT PROVIDED FOR

There are three major contingent projects which have not been provided for in the second plan. These are:-

(a) The Kariba Gorge Project
(b) The extension to the Iron and Steel Works to produce an additional 60,000 to 70,000 tons of finished steel per annum and 15,000 tons of pig iron should the Government not dispose of the Works.

(c) The establishment of an Oil from Coal industry.

(a) <u>The Kariba Gorge Project</u>

This project will be an inter-territorial one serving the requirements of both Southern and Northern Rhodesia.

The possibilitos of setting up a hydro-electric power plant have been investigated by an Inter-Territorial Hydro Electric Power Commission set up under the authority of the Central African Council. The Commission was assisted by an Advisory Panel of Consulting Engineers. Members of this Panel were:-

Sir William Halcrow, M.I.C.E. M.I. Mech. E., partner of Sir William Halcrow and Partners, London.
H.J.F. Gourly Esq., M.Eng., M.I.C.E., partner of Messrs. Binnie, Deacon and Gourly, London.
C.H. Pickworth Esq., M.I.C.E., M.I.E.E., partner of Messrs. Procce, Cardew and Rider, London.
G.E. Kennedy Esq., M.A., M.I. Mech. E., M.I.E.E., partner of Messrs. Kennedy and Donkin, London.

The Report on Kariba Gorge and Kafue River Hydro-Electric Projects by the Inter-Territorial Hydro-Electric Power Commission, printed by the Southern Rhodesia Government Printing and Stationery Department (reference G.P.&S. 2808 - 500-18-5-51) has been considered by the Government of Southern Rhodesia which, subject to agreement by the Government of Northern Rhodesia, is prepared to accept and implement the recommendations made.

The Commission recommended that the project, having an initial available capacity of 385,000K.W., be proceeded with immediately in order to have the undertaking in operation by 1961 or as soon thereafter as possible. The final project would have a capacity of 1,000,000K.W.

The estimated costs are as follows:-

	Initial	Final
Installed capacity	385,000K.W.	1,000,000K.W.
	£ million	£ million
Works		
Civil Engineering & Generating Plant	32.080	43.600
Generator, transformers etc. at Kariba	1.372	2.740
Transmission system and step-down transformers at receiving stations	10.067	28.164
TOTAL (£ million)	43.519	74.504

The estimated total cost of energy based on the estimated annual charges at 70% Load Factor is as follows:-

	Initial	Final
Installed Plant Capacity	385,000K.W.	1,000,00CK.W.
	Pence/KWH	Pence/KWH
Ex generators	.1570	.0832
Energy sent out from Kariba	.1656	.0899
Energy delivered at Receiving Stations	.2525	.1703

The present price of energy ex generators is .809d/KWH and the average selling price to consumers is .859d/KWH.

Annual operating costs are estimated at £2,226,000 for the initial project which will produce 2,115,000,000 units of electricity and £4,006,000 for the final project which will produce 5,641,000,000 units of electricity. Interest has been taken at 3½% per annum.

The construction of this project will effect direct savings of considerable sums for the provision of rail transport and water supplies which would otherwise be needed and would make available coal resources for other purposes.

If the project is to be completed by 1961 or as soon thereafter as possible, access to the site for construction materials must be available by 1954 at the latest. A rail link would be very desirable. Failing this, road improvements and suitable vehicles will be necessary. At least £500,000 would be required for these purposes.

The Commission recommended the setting up of a Rhodesia Hydro-Electric Power Authority, to finance, control and administer all installations at Kariba together with the main transmission lines and associated equipment. This authority would raise the necessary capital.

/(b).....

(b) Iron and Steel Works

In March 1950 John Miles and Partners Ltd., the consultants to the Government, produced their report on the extensions required of the Que Que Steel Works to allow an annual production of 109,000 tons of finished products and 10,000 tons of foundry iron, and the estimated capital costs which the expansion would involve. A working party was later appointed by the government to consider the expansion of the Steelworks; this working party based its calculations on a plant producing 150,000 tons of finished products.

The comparative capital cuts are as follows:-

	109,00 ton plant	150,000 ton plant
Preparation of site, drains etc.	700,000	800,000
Cope oven and by product plant	1,100,000	1,450,000
Blast furnace plant	1,650,000	1,980,000
Steel making plant	1,400,000	1,770,000
Rolling mills	2,800,000	3,200,000
Engineering contingencies 12½%	950,000	1,150,000
	8,600,000	10,350,000
Construction interest, say	500,000	600,000
	9,100,000	10,950,000
Working capital	700,000	1,150,000
	9,800,000	12,100,000
Housing	1,000,000	1,300,000
Additional provision for smaller plant	200,000	-
Total	£11,000,000	£13,400,000

It will be observed that whereas the output of the larger plant would be 38% greater than that of the smaller, the increased capital expenditure is 22%, and increased gross earnings 40% - assuming gross earnings of the smaller plant at £1,660,000 and the large at £2,330,000. The Consultants had included provision for maintaining the plant in a good state of repair in their estimate of manufacturing costs, but it was later agreed that renewals should be provided for. For the 150,000 ton plant, therefore, standing charges were estimated as follows:-

Renewals - 3% on £13 m.	= £390,000
Interest - 4% on £17 m.	= £680,000
Capital Redemption 1% on £17 m.	= £170,000
	£1,440,000

Note: The totals of £13m. and £17m. include the assets of, and capital outlay on existing plant.

The Government has subsequently considered an alternative to the 150,000 ton scheme; Firstly an open hearth furnace costing £600,000 is to be established to produce 45,000 tons of steel annually. Secondly, a second blast furnace and open hearth furnace with a coke oven would be installed at a cost of £4,000,000 to produce 70,000 tons of steel and 15,000 tons of pig iron annually. This second development would take place in about three years after the fist stage of the proposed scheme was in operation. The full scheme would be completed during the second plan period.

If Government does not sell the Works the expenditure necessary to carry out the development programme during the period of the second plan is estimated at £5,640,000 to be outlayed as follows:-

1951/52	£ 765,000
1952/53	1,753,000
1953/54	2,130,000
1954/55	992,000
Total	£5,640,000

(c) Oil from Coal Industry

The report of the consultants has not yet reached the Government and it is too early to say how the industry will be financed should it be proceeded with.